

THE MEDICAL JOURNAL OF AUSTRALIA

VOL. I.—34TH YEAR.

SYDNEY, SATURDAY, APRIL 12, 1947.

No. 15.

Table of Contents.

[The Whole of the Literary Matter in THE MEDICAL JOURNAL OF AUSTRALIA is Copyright.]

ORIGINAL ARTICLES—	Page.	BRITISH MEDICAL ASSOCIATION NEWS—	Page.
The Adaptation of Military Scrub Typhus Mite Control to Civilian Needs, by R. N. McCulloch, B.Sc., B.Sc.Agr.	449	Scientific	476
The Diagnosis and Treatment of Anxiety States, by William E. Wilson, M.D.	452	MEDICAL SOCIETIES—	
The Application of the Dermotome in Plastic Surgery, by Basil W. B. Riley, M.B., Ch.M., F.R.C.S.	461	Melbourne Paediatric Society	476
REPORTS OF CASES—		NAVAL, MILITARY AND AIR FORCE—	
An Interesting Cause of Noises in the Ear, by D. G. Perrett	466	Appointments	477
REVIEWS—		SPECIAL CORRESPONDENCE—	
Psychological Testing	467	Canada Letter	478
Year Book of Radiology	467	CORRESPONDENCE—	
Gynaecology	467	An Appeal	478
Fractures, Dislocations and Sprains	468	The Beneficial Effects of Yeast in Diabetes Mellitus	478
Physiology	468	The Treatment of Acute Perforation in Peptic Ulcer	479
Materia Medica for Nurses	468	Spontaneous Rupture of the Spleen	479
LEADING ARTICLES—		AUSTRALIAN MEDICAL BOARD PROCEEDINGS—	
The Study of Biochemistry and Nutrition	469	New South Wales	479
CURRENT COMMENT—		NOMINATIONS AND ELECTIONS	479
Sequels of Infective Hepatitis	470	OBITUARY—	
Nutrition in Pregnancy	470	Edgar Selwyn Harrison	480
Two New British Medical Association Journals	471	THE FEDERAL MEDICAL WAR RELIEF FUND	480
ABSTRACTS FROM MEDICAL LITERATURE—		THE RUPERT DOWNES MEMORIAL FUND	480
Radiology	472	NOTICE	480
Physical Therapy	473	MEDICAL APPOINTMENTS	480
BIBLIOGRAPHY OF SCIENTIFIC AND INDUSTRIAL REPORTS—		BOOKS RECEIVED	480
The Results of War-Time Research	474	DIARY FOR THE MONTH	480
		MEDICAL APPOINTMENTS: IMPORTANT NOTICE	480
		EDITORIAL NOTICES	480

THE ADAPTATION OF MILITARY SCRUB TYPHUS MITE CONTROL TO CIVILIAN NEEDS.

By R. N. McCULLOCH, B.Sc., B.Sc.Agr.,

Deputy Principal, Agricultural College, Roseworthy, South Australia.

SECTION I.

TROMBICULIDS are a large group of mites, of which the tiny red spider-like six-legged larvæ (one-fifth to one-third of a millimetre in length) are parasitic on higher animals. Of the hundreds of species known in the world, possibly dozens are recorded as attacking man. These are referred to by a variety of common names, such as "chiggers", "harvest mites", "scrub itch", "bush moccas" et cetera.

The control of chiggers, virtually impracticable before the second World War, has been greatly advanced by military research undertaken because some species are the vectors of scrub typhus. In 1942 American workers discovered that dimethyl phthalate and other new mosquito repellents were remarkably effective against chiggers (Madden, Lindquist and Knipling, 1944). This line was followed up in the Australian Army. Phthalates were found to give protection against trombiculids by being toxic rather than repellent, and dibutyl phthalate, more readily available in Australia, though less toxic than the dimethyl compound, was found much more resistant to washing from clothing and therefore superior. Dibutyl phthalate was issued in the Australian Army at the end of 1943 as "anti-mite fluid" and was almost certainly responsible for the decline of 90% in scrub typhus infections which followed (McCulloch, 1946).

American workers then undertook a systematic search for new miticides, and discovered in 1944 and 1945 a

number superior to phthalates (Snyder and Morton, 1946). They also surveyed materials for attacking the mites in their breeding areas with the object of camp-site disinfection. In this field the new insecticide gammexane (the γ isomer of benzene hexachloride) proved outstanding, killing trombiculids without harming vegetation at an astonishingly light and economical dosage (Linduska, Morton and McDuffie, 1945). Treatment was approximately equally effective whether the insecticide was applied to the ground as a dust or as a spray, and completely even distribution over the surface was not required. In one experiment excellent control was obtained when the gammexane was deposited in heaps approximately two feet apart.

Problems in Mite Control.

Problems in trombiculid mite control in Australia and New Guinea are presented by the conditions to be discussed.

"Grass Itch" in Sydney.

"Grass itch" in Sydney is caused by *Acomatacarus australiense* Hirst, often called "spider mite", though it is distinct from red spider of many cultivated plants. Like other species of the family, grass itch mite larvæ hatch from eggs in the soil and normally remain in or on the soil until the opportunity occurs for them to crawl onto a host animal for a blood feed.¹ *Acomatacarus*, however, can also leave the ground, at least in damp weather, and mass in such situations as on the tops of fence posts, presumably seeking to attack birds, possums, lizards and cats.

On man these mites produce itchy lumps frequently diagnosed as hives, most commonly about the waist, but often distributed over the clothed body and rarely in the

¹ "Blood feed" is a loose term. The larvæ attach themselves in the manner of ticks and take two or three days or more to engorge, but their food is serum.

hair. They appear incapable of successful attachment to unclothed human skin. The tiny mites are not felt as they crawl on the skin, except about the face and hair. Bites are not noticed at the time of attachment, the itch beginning usually ten to eighteen hours later and lasting for several days. However, individual susceptibility in man varies greatly.

Worried by itch, many people have appealed for help to the New South Wales Department of Agriculture. Usually their story is one of prolonged irritation to some or all members of a family. This has come to be recognized as following time spent in the garden. Eventually official publicity has drawn attention to the pests or the mites have been seen on shoes and recognized as the cause of the trouble. Infestation is reported from late spring to early autumn. "Grass itch" is regarded by Mr. T. McCarthy, chief entomologist of the department, as being confined to clay soils (Wianamatta shales) within the area bounded by Hurstville, Parramatta, Chatswood and Summer Hill. In April, 1946, an infestation was seen at Macksville, New South Wales, by Mr. C. R. Wallace, entomologist of the department.

"Titree Itch" in South Australia.

"Titree itch" on the south-east coast of South Australia is caused by *Trombicula samboni* Womersley. It is well known in the warmer months of the year to local residents and especially to visiting duck-shooters. The mites are extremely abundant in "blue titree" country and are said frequently to "redde a gun" placed among them. They attack rabbits and domestic animals as well as man.

"Black Soil Itch" of Queensland.

"Black soil itch" of the central highlands of Queensland was unrecognized by scientific workers until the investigation of Gill, Moule and Riek (1945). The mite concerned is *Trombicula sarcina* Womersley. These mites cause a sometimes serious condition of sheep, and on certain black soils they attack human beings, especially in gardens and sheep yards.

"Scrub Itch."

"Scrub itch" is caused by *Trombicula minor* Berlese and some other species associated with tropical rain forest (scrub), particularly on the Atherton Tableland in North Queensland, but also in other "scrub" areas as far south as New South Wales. It is well known to forest workers, farmers and picnickers, and before the advent of "anti-mite fluid" was frequently experienced by troops in jungle training.

"Scrub itch" or mokka-biting in New Guinea, well known to civilians before the war, was notorious in the army in 1942 and 1943. It was caused by several species of *Trombicula* and *Schöngastia*.

Scrub typhus infection exists in almost all parts of New Guinea; approximately 2,840 cases were reported there in the Australian Army in the thirty-nine months to December, 1945, 2,100 having occurred before the end of 1943. The known range of the disease in Queensland is the rain forest country between Ingham and Mossman. Heaslip (1941) traced 54 civilian cases for the two-year period ending September, 1940. Over 150 military cases occurred in the twelve months ending in March, 1944.

Methods of Control.

For the grass itch mite in Sydney gardens clothing treatment has been proved effective; but it is less convenient of application than locality disinfection, which now appears the method of choice.

With a view to applying the American discovery of the use of gammexane, as entomologist at the School of Public Health and Tropical Medicine, University of Sydney, I undertook a limited research in the spring of 1946. Some details are given in Section II. Gammexane gave extremely good control. It was applied in the form of a dust containing 14% benzene hexachloride in an inert material, at the rate of one and one and a half ounces of the dust

per six square yards, approximately equal to one and one and a half pounds respectively of gammexane per acre. The dust was distributed fairly evenly over the ground by being shaken from a tin with a perforated lid. This result, in view of thorough American experiments, may be regarded as showing the toxicity of gammexane to *Acomatacarus* and permitting the recommendation of its use. The present recommendation must be for the dusting of garden beds and lawns with gammexane at the rate of one pound per acre, when the pest becomes obvious in the spring, treatment to be repeated as required—probably at intervals of two to four weeks. There is reason to hope that as the season advances hatching of larvae from eggs will decline or cease and that two or three dustings in early summer may be sufficient.

Gammexane, discovered as an insecticide and produced in England by Imperial Chemical Industries, Limited, was not commercially available in Sydney in December, 1946. The sale of ready-to-use forms may be expected in the

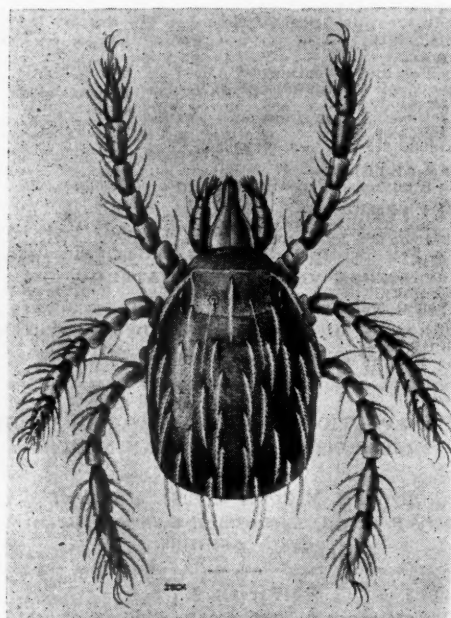


FIGURE I.

Trombicula deliensis Walch, a proved vector of scrub typhus in New Guinea. It occurs in North Queensland. Drawing by Mr. E. H. Zeck for the School of Public Health and Tropical Medicine, Sydney. McMaster Laboratory photograph.

fairly near future. A slight disadvantage of gammexane is the characteristic musty odour, which is detectable in a garden for up to four days after dusting. This may discourage people from lying on treated lawns for a time, but it appears otherwise unimportant.

Clothing treatment with phthalates can certainly give excellent control of Sydney "grass itch" for adults working in gardens. Treated socks will intercept and kill mites crawling over shoes—the great majority of those encountered. Women could wear treated "bobby socks". Ankle bandages of heavily impregnated cloth will stop mites if worn on the skin—not over woollen socks. In fully treated clothes people may sit or kneel on infested ground or handle tools with impunity. The dosage is one teaspoonful to a pair of socks, one ounce to one set of socks, trousers and shirt, applied as uniformly as possible. Retreatment with dimethyl phthalate is required after each laundering, but the dibutyl compound will give protection for half a dozen warm-water hand washings or three short

boillings or machine washings. The performance of these almost odourless, colourless fluids is amazing, but there are some disadvantages associated with their use, as follows.

1. Safety factors for children have not been worked out. Risks are small, but pure phthalates if they enter the eyes and mouth are certainly dangerous. Both compounds proved remarkably harmless to men's skin as judged by military experience. Dimethyl phthalate is known to cause severe stinging if applied directly to the male genitalia.

2. Phthalates may harm some artificial fibres, as they dissolve plastics such as fountain pens. They are harmless to cotton and wool.

3. On cloth treated and unwashed the fluids pick up dust as oil does. Therefore people with infested gardens could hardly follow the military practice of living in clothes treated regularly each fortnight. But all wool and cotton socks could be treated, and for children a routine could probably be worked out of weekly treatment of clothing with dibutyl phthalate before laundering. The laundering would leave in the cloth enough phthalate to give protection without picking up dirt.

In Australia at present phthalates have advantages over miticides more recently developed for anti-trombiculid clothing treatment, in being well known to ex-service personnel and fairly readily available. Dimethyl phthalate

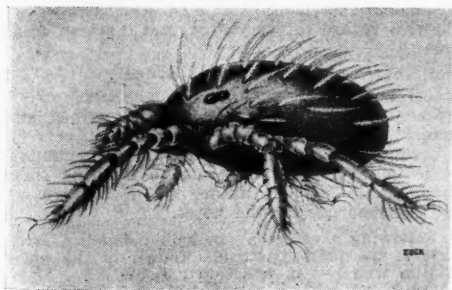


FIGURE II.

Trombicula deliensis Walch, lateral view.

has reached civilian trade from army stocks, and moderate production for sale as a mosquito repellent may be expected to continue. The dibutyl compound, easier to prepare and produced in quantity as a plasticizer, is always likely to be the cheaper of the two. Its price to the army was about two shillings per pound.

Of the newer and more effective miticides for clothing treatment, mention may be made of benzyl benzoate and benzil. The former was first used against chiggers by American workers in 1944. Its recorded superiority was due to the comparative failure of the more slowly acting dibutyl phthalate against Florida and Panama chiggers. In New Guinea there was little to choose between the two. Benzil was discovered near the end of the war. Against Florida chiggers it appears outstanding. Whether its great resistance to laundering would have much practical value against Sydney "grass itch" is not certain.

Methods of Treating Clothes with Phthalates.

Socks are most easily impregnated by smearing the hands with fluid and crumpling and rubbing the socks between them—six wettings of the hands per sock. Hand-smearing was used successfully for full uniforms in the Australian Army (McCulloch, 1946) and was later adopted by the British authorities for South-East Asia. American authorities preferred the dipping of clothes in an emulsion of phthalate (5%) in 2% soap solution. For home use, in my opinion, a shaker bottle has advantages. A suitable bottle is prepared by punching some two dozen of the finest practicable holes in the metal top of a tall, narrow, screw-top bottle (for example, an oyster bottle) fitted with

a leather washer. One fluid ounce of phthalate and two or three ounces of water shaken together emulsify readily and are maintained in a state of emulsion by the shaking required to expel the mixture. At this dilution economical and adequately uniform cover is obtained. Application of phthalates by atomizer gives erratic results and is not to be recommended.

For "treetree itch" clothing treatment is the method of choice.

"Black soil itch" may be dealt with in gardens by gammexane and elsewhere by clothing treatment.

Tropical "scrub itch" and scrub typhus are to be guarded against by all residents of New Guinea except in the dry Port Moresby area; but risks are small except for those having to leave beaten tracks. In the scrub typhus area of Queensland the danger of infection exists in the vicinity of all jungle. "Scrub itch" without a history of the disease is extremely common on many dairy farms. Under these conditions locality disinfection with gammexane has little application except for the cleaning up of new camp sites. Clothing treatment, on the other hand, should be used by all exposed to risk, and in fact it is now widely appreciated on the Atherton Tableland.

SECTION II: EXPERIMENTAL DUSTING OF SOIL WITH GAMMEXANE FOR THE CONTROL OF CHIGGERS.

In Concord, in the western suburbs of Sydney, I visited a number of homes and searched for trombiculid mites at intervals of from seven to ten days, beginning on September 16, 1946. The first mites were seen on November 11, six being taken on boots in an hour's collecting. On November 19 some 50 and on November 27 about 100 were taken in an hour, all in the one garden subsequently used for dusting tests. In half a dozen adjoining or neighbouring properties mites were found on November 19 and 27, but in small numbers.

More detailed surveys were made in the first garden on December 5, 6 and 9. Chiggers are well known to be patchily distributed over infested ground, and they are also known to run onto and explore almost any new object placed among them. For counting, American workers used black cards measuring eight inches by five inches, standing on edge, one-minute exposures of the cards in test areas giving counts of up to 200 mites for eight cards. At Concord, with smaller populations, I preferred black cotton cloths sewn on wire frames, seven inches by four inches in area, dropped flat on the soil and left for two or four minutes. The pile of the cloth slowed the mites' movements and facilitated counting. The most heavily infested patches of ground gave counts of 30 to 50 mites per cloth for two-minute exposures on bare ground. On lawns four-minute exposures were used, because commonly there was a lag of more than a minute before the mites reached the cloth.

Direct sunlight on hot days greatly reduced mite activity on the hot surface. Thus ground which in cloudy conditions gave counts of 10 to 50 mites per cloth, in direct sunlight yielded only occasional mites on boots or clothes which were hot to the touch. Counts in connexion with the experimental dusting were made in dull weather, or in the shade of trees, or under a tent fly stretched horizontally five feet above the ground for thirty minutes before the count was begun. This artificial shade was found to reduce from the 120° to 140° F. range to the 80° to 90° F. range the temperature recorded by a laboratory thermometer lying on the soil with its bulb just covered by dust. It also allowed apparently normal mite activity. When the shade was removed and infested clothes were left on the ground, mites were quickly stranded on them and killed by the heat.

Seven plots of ground, six or twelve square yards in area, and each including four to six known rich patches, were marked out. Five treated plots were dusted on December 9 with one or one and a half ounces per six square yards of a dust containing 14% crude benzene hexachloride and therefore approximately 1.9% gammexane. This represented a rate of one and a half pounds respectively of gammexane per acre.

Results.

Reduction in mite population was immediate and striking. For a control plot and the treated plot showing the least reduction in numbers (this plot received one and a half ounces of dust per six square yards), counts made before and for seventeen days after treatment are set out in Table I.

TABLE I.¹

Time Relative to Dusting.	Control Plot.	Treated Plot.
4 days before	—	308 mites on 14 cloths
3 days before	91 mites on 8 cloths	131 mites on 10 cloths
1 hour before	38 mites on 4 cloths	27 mites on 4 cloths
1 day after	54 mites on 6 cloths	1 mite on 12 cloths
2 days after	61 mites on 7 cloths	1 mite on 6 cloths
4 days after	95 mites on 4 cloths	7 mites on 6 cloths
6 days after	—	1 mite on 6 cloths
7 days after	—	2 mites on 6 cloths
8 days after	93 mites on 6 cloths	0 mite on 6 cloths
12 days after	35 mites on 3 cloths	14 mites on 17 cloths
15 days after	—	5 mites on 3 cloths
17 days after	99 mites on 4 cloths	8 mites on 12 cloths

¹ After being counted all mites were shaken from the cloths to the ground from which they had been picked up.

The reduction in chigger numbers throughout the seventeen-day period was of the order of 95% to 99%. That the kill was not quite complete would appear most readily explicable on the basis that hatching of eggs in the soil was continuing. The life history of *Acomatacarus* is unknown. If it is found that only one generation occurs in the season, there is reason to hope that two or three dustings with gammexane early in the summer may give complete control.

Bibliography.

- D. A. Gill, G. R. Moule and R. F. Riek: "Trombidiosis of Sheep in Queensland", *Australian Veterinary Journal*, April, 1945, page 22.
- W. G. Heaslip: "Tsutsugamushi Fever in North Queensland", *THE MEDICAL JOURNAL OF AUSTRALIA*, March 29, 1941, page 380.
- J. P. Linduska and F. A. Morton: "Additional Tests of Benzene Hexachloride (British 666) for the Field Control of Chiggers", United States National Research Council, Insect Control Committee, Report Number 109, August 7, 1945.
- J. P. Linduska, F. A. Morton and W. C. McDuffie: "Preliminary Tests of Selected Materials for the Field Control of Chiggers", United States National Research Council, Insect Control Committee, Report Number 106, August 3, 1945.
- A. H. Madden, A. W. Lindquist and E. F. Knipping: "Tests of Repellents against Chiggers", *The Journal of Economic Entomology*, Volume XXXVII, 1944, page 283.
- R. N. McCulloch: "Studies in the Control of Scrub Typhus", *THE MEDICAL JOURNAL OF AUSTRALIA*, May 25, 1946, page 717.
- F. M. Snyder and F. A. Morton: "Materials as Effective as Benzyl Benzoate for Impregnating Clothing against Chiggers", *The Journal of Economic Entomology*, Volume XXXIX, 1946, page 385.

THE DIAGNOSIS AND TREATMENT OF ANXIETY STATES.¹

By WILLIAM E. WILSON, M.D.,
Melbourne.

An anxiety state is one in which a patient for any reason at all gets the idea that there is something wrong with him or his brain, heart, lungs, abdomen, nerves or any other organ or part or function of the body. Even if he is organically sound, it is a mistake to say there is nothing wrong with the patient. It often commences with a fright or gradual worry, or follows illness, accident, confinement or overstrain at work, loss of weight or bodily ill health. It is always associated with lack of confidence.

Once established as an "anxiety" or "worry" state of mind, it tends to be transferred from one part or function of the body to another. If one gets a fright about the heart, it palpitates; insomnia often follows and worry is often diverted to that. Then the patient feels tired and

unfit for work and ascribes that to loss of sleep; then he often centres the worry or anxiety on tiredness, weakness and debility, lack of energy and so on, so that worry can be made to centre on any part or function of the body about which the patient, for some reason or other, owing to some thought or happening, or some suggestion from others, may become anxious. Hence the great variability in some cases of anxiety states.

The anxiety state may take the form of any symptom, pain, flush, ache, feeling, tiredness, pressure, shake or shiver from the top of the head to the tip of the toe.

Most anxiety states are not the result of one fright, illness or other factor, but are due to different frights, worries *et cetera* at different periods of life, and may extend back for years; but in most patients one finds one or two outstanding frights or worries, which form the main basis for the anxiety state as presented to the physician; and with treatment along the lines to be suggested a good prognosis can be given in a great majority of cases.

It is a surprising thing that patients remember quite a proportion of big frights or worries that have occurred in life—in other words a fright or worry that can be remembered certainly created a considerable impression at the time. Many frights *et cetera* are forgotten, but can often be recollected if asked for.

A person having a "worried state of mind" will be reassured on one subject of worry by his physician, but the "worried state" will soon settle on something else to worry about; therefore, one must aim at absolute confidence with regard to everything, and that can be attained with care.

"Pointing the Bone."

The ceremony of pointing the bone, which is of great importance among our Australian aborigines and very characteristic, to a greater or lesser extent, of very many daily occurrences in our professional and public life of today, is one which I am going to describe shortly. I wish to thank Mr. McCallum, Chief Librarian, Public Library, Melbourne, for the notes.

Following a ceremony including dancing, chanting *et cetera*, the facts are made known to the unfortunate victim who has been selected to die.

Overcome with consternation and terror, the fellow immediately begins to fret, and death will inevitably occur unless counter influence of a medicine man can make itself felt in time.

A man who discovers he is being boned by an enemy is indeed a pitiable sight. He stands aghast, with his eyes staring at the treacherous pointer, with his hands lifted as if to ward off the lethal medium which he imagines is pouring into his body. His cheeks blanch, his eyes become glassy. He attempts to shriek, but usually the sound chokes in his throat. His body begins to tremble and muscles twitch involuntarily. He sways and falls in a swoon, but soon writhes as if in mortal agony and begins to moan. After a while he becomes more composed and crawls to his wurlie.

From this time onwards he sickens and frets, refusing to eat and keeping aloof from the daily affairs of the tribe.

Unless help is forthcoming in the shape of a counter-charm administered by the hands of the "Nangarril" or Medicine Man, his death is only a matter of a comparatively short time.

When as a result of fright, anxiety, worry, upset bereavement, illness or accident, a patient begins to worry, or "think" about that trouble, he sets up a train of symptoms which vary considerably in every case.

They are influenced by the suddenness or severity of the trouble, or by its long continuance, by its solvable or insoluble nature and other factors including proper treatment. They are influenced by his past history.

If a doctor told him twenty or fifty years ago that his heart was a little weak or tired, or if he has been told that blood pressure is high or low, or if he happens to hear of illness of friends, growths, blood pressure *et cetera*, he is liable to acquire any of the more common symptoms of an anxiety state. He may get hot flushes or sweats, shakes or shivers, palpitation or extrasystoles of heart, headache, pressures on any part of head or body, giddiness, tiredness (local or general), loss of energy,

¹ Read at a meeting of the Victorian Branch of the British Medical Association on March 5, 1946.

lack of concentration, exhaustion; he may feel "rotten", or have an epigastric empty feeling or indigestion *et cetera*. He may feel so weak that he is fit for nothing. He may not be able to sleep; or be wakeful; or wake up in a start; or dream badly and have nightmares. He may lie awake for hours. He may be mentally depressed and irritable.

All these symptoms are due to worry and thinking—not necessarily any serious worry. He will soon jump to the conclusion that he "has blood pressure" and will get a stroke, or alternatively that he is "going mental".

These factors are again influenced by someone having told him he "has blood pressure", or even asking him if he gets very depressed without guarding him and indicating that the depression is only due to a lot of thinking and is not of great importance, unless made so by expert opinion or even suggested to be so, or if the condition is not ameliorated at once when it is mentioned to his doctor.

Psychotic depression (not due to anxiety) is very rarely seen in ordinary medical practice. The thinking (worrying) mind is not really a mental (psychotic) state which is of any importance in most cases, but is associated with lack of confidence.

When a person for any reason of fear, anxiety, worry *et cetera* starts thinking, he sometimes realizes that he is thinking or worrying a lot, but very often indeed does not think he is worrying at all. A patient who is worrying greatly often says he is not worrying at all. He may occasionally deceive you, and you find out by his reaction, flushes *et cetera* that he is worrying.

All sorts of thoughts cross his mind—hundreds of thoughts are constantly flitting across our minds in normal health and are discarded—but are liable to be "taken up" as of some importance when an anxiety state exists. If he is worried and gets depressed, the depression idea often hits him and he immediately, secretly and without telling anyone, has the fear of insanity or going mad (without reason, of course).

If as a result of worry he cannot sleep well, he becomes anxious about sleep, and naturally he thinks that he cannot sleep, and if sleep does not return, that he will get worse and sleep less; and if he cannot sleep enough, he thinks there is nothing for it but to "become mental". This added thought of becoming mental and insane is a terrible thought to an already worried mind and increases worry, anxiety and insomnia and is a much more common thought in practice than is realized. One has to try to elicit it in some way without asking the person if he thinks he is going mental.

Question: "Do you feel very miserable at times?"

Answer: "Yes."

Question: "Do you get very depressed?"

Answer: "Yes, quite a lot—very depressed."

Question: "What do you think is the cause of it?"

Answer: "Don't know." (They will not say what they think.)

Question: "Do you ever think you are going mental?"

Answer: "Yes."

Reply to that: "Well, you are not, there is no evidence of it and you couldn't do so if you tried."

He is generally relieved, but one often has to repeat the reassurance from time to time if he does not improve.

To leave the question after asking a person if he thought he was going mental would be a tragedy and would do untold harm; therefore, reassure a patient at once. He would think you thought so otherwise.

What are some of the important anxieties in practice?

I am going to speak to you first about blood pressure. Blood pressure in practice is a subject that has been treated with a considerable lack of understanding.

There are a great number of anxiety states in practice due to the handling and discussion with patients by our profession of blood pressure, high or low, followed by a very important discussion by the patient with his or her friends as soon as he or she meets them. The patient says: "The doctor has just told me I am suffering from high blood pressure (or low blood pressure)." They say: "Oh, I am sorry to hear that. You know you are liable to strokes, attacks of giddiness *et cetera*." The friends

often prove to be devils incarnate and force their stupid opinions on the unfortunate anxious patient with untold harm.

The public generally attribute lots of cases of flushes, rushes of blood to the head, headaches, depression, insomnia, anxiety states and in fact most anxiety symptoms to blood pressure.

I do not believe any of these symptoms are due to high blood pressure (or low blood pressure), but are due to "thinking" or "worry" over the thought of having high or low blood pressure. I am firmly of the opinion that high blood pressure, even associated with considerable arterial thickening, does not cause any symptoms for years in many cases, unless vascular deterioration occurs and cerebral thrombosis and hæmorrhage or coronary disease *et cetera* supervene.

In malignant hypertension—that rare and rapid form of serious disease associated with eye hæmorrhages, severe headaches and albuminuria, followed by rapid fatal termination—headaches and uræmic symptoms due to the condition do occur, but in all other forms of high blood pressure symptoms such as headache, giddiness, depression, tiredness, anxiety states, due to that high blood pressure do not occur unless vascular degeneration is occurring to a marked extent, and even then a lot of the symptoms generally ascribed to high blood pressure are due to worry and can be removed by reassurance methods.

One hears a lot about low blood pressure. There is no such thing as low blood pressure as a disease, except after accident or severe organic illnesses (as part of that illness) or after cerebral hæmorrhage or with anaesthetics, operations *et cetera*, but not in ordinary health, even with marked anxieties, and if there is, it is most unimportant and of no significance. It is a "bone" and a rather sharp one, too.

One often sees patients with a systolic blood pressure of 100 and a diastolic pressure of 80 millimetres of mercury, or even those whose pressures are 90 and 70 millimetres who are told: "Your blood pressure is too low and causing weakness, exhaustion *et cetera*." This is quite wrong; low blood pressure as described causes no symptoms. Patients with a systolic blood pressure of 180 to 200 millimetres and over, without complications, often live for many years, and it is difficult to say in any one case that they will not live for ten, fifteen or twenty years, even approaching or exceeding the normal expectation; therefore, it is not justifiable to lay much stress on a raised blood pressure because the advice undoubtedly causes years of misery. Many examples of high or low blood pressure are found in very old people. I find that low blood pressure people often live very long and healthy lives. I suggest you say: "Your blood pressure is a little above normal; you are not as young as you used to be; therefore, as a matter of common sense don't rush for trams, carry heavy loads, move furniture around *et cetera*." By doing so you take all care. You cannot do more, no matter how you frighten a patient, but you can do a great deal of harm.

CASE I.—Mrs. P., aged fifty-seven years, was seen on May 9, 1945. She complained of "terrible palpitation" of the heart for the previous month and once before, a year earlier. The pain started generally when she was hurrying or walking. A "feeling" went all over her, a sort of numb feeling, then the heart started to palpitate. She did a lot of housework. She became anxious about palpitation, worried and depressed; she slept well. She would be walking along and all of a sudden a "feeling" would come over her, then violent palpitation occurred and her breath almost stopped. Gradually the heart would come back to normal and she felt all right. Exercise tolerance was quite satisfactory. The systolic blood pressure was 210 and the diastolic pressure 102 millimetres of mercury. The urine contained neither albumin nor sugar.

On May 16 she felt a lot better, and had no attacks since. She said: "A doctor scared me with blood pressure every time I went to her. I had no peace of mind at all. The family would ask what report I got today from the doctor, and they got scared. Constant advice about blood pressure made me very frightened and I couldn't think of anything else."

On May 23 everything was "horrible" and she said it was not her nature to be like that. She slept much better, was

not so tired, had had no palpitation since and was getting about well.

On June 29 she felt 100% better. She said that she had "no more turns since coming here and no heart thumping". She said that the terrible fear amounting constantly to a "dreadful state" was now gone.

On September 24, 1946, she had gradually improved and was sleeping and feeling well. She has been very well since.

CASE II.—Mrs. E.M., aged seventy-one years, had been worried about her blood pressure for nearly two years and had been treated by four doctors. All told her that she had a high blood pressure and that she ought not to do any work, but should sit down and do a bit of darning. One doctor said that if she did any work she would be back in hospital. He said: "You are like an old machine—done—and no chance of repair."

Her blood pressure caused pain in the head, especially at the top, and she could not keep the top of the head warm. For a while she had "pins" on the top of the head. Her indigestion was due to blood pressure. Previous to the high blood pressure she had been treated for seven or eight years, up to three years previously for low blood pressure. She did not want to live on account of feeling so miserable. Her systolic blood pressure was 200 and her diastolic pressure was 100 millimetres of mercury, but nine days later the blood pressure figures were 160 and 95 millimetres of mercury and for the next month did not exceed 140 and 96.

She was reassured that the blood pressure was of no consequence in her case; she did very well and remained very well for three years to my knowledge and did all her own work. All her symptoms disappeared rapidly and at present she is nursing a sick husband.

CASE III.—Mrs. W., aged fifty-six years, had suffered lately from epistaxis and from flushes which she thought were due to high blood pressure. The systolic and diastolic readings were 200 and 110 millimetres of mercury; she was not sleeping well. She was very tired and thirsty. She was reassured about her blood pressure and other worries and after a month she appeared to improve a bit; at the next visit she said that she was sleeping badly, she complained of palpitation, and was worried about her heart, flushes *et cetera*. It was discovered that she had had a great worry when she was only seventeen years of age, and it was always recurring to her. This matter was dealt with, ameliorated, and she was told it was no fault of hers and therefore she must not worry about it any more. She continued to worry for another week or two. I said to her: "It is no good coming here for treatment; you don't believe me", and I growled at her for worrying (still maintaining her confidence). Her blood pressure remained about the same throughout and after three months she was sleeping well, there was a satisfactory improvement in health, she was much happier and said: "I am really very much better." In talking over her case she said: "You got very cross with me and growled at me for not doing as well as I should. I believe it did a lot of good." She was seen again this week and feels wonderfully well in every way. Her blood pressure readings are still about 200 and 100 millimetres of mercury.

CASE IV.—Miss K., aged fifty-five years, was seen in bed. Her systolic and diastolic blood pressure readings were 200 and 100 millimetres of mercury respectively. She had had a stroke six months previously and had been in bed ever since. She was worried and nervous and afraid to get up. She felt very miserable. Power had already returned to a considerable extent. She was allowed out of bed and soon recovered and returned to work and has been working now for five years.

CASES V AND VI.—Mrs. K. and Mrs. A. each aged about seventy years, came to see me the same day; they were feeling depressed and miserable with all sorts of nervous symptoms. Both said that they thought they had blood pressure. The blood pressure was normal in each case. The real worry was alcoholism in a young man who had been befriended in one case, and in the other the old lady was miserable with her son-in-law and would not tell anyone.

CASE VII.—Mr. W., aged sixty-four years, was seen on August 10, 1943. He had done no work for six years on account of illness. He had had an accident with a motor-car seven years previously and had been no good since. He was very nervy and thought he was worrying. His systolic and diastolic blood pressure readings were 240 and 150 millimetres of mercury. His urine contained a trace of albumin, but was of a good colour. He died on August 19, 1944.

This patient was very depressed and miserable and was sleeping badly. He suffered from a severe hypertension with marked vascular degeneration causing organic disease. He was reassured about his nerves, and although

organically feeble he remained happy and free from depression till his death.

CASE VIII.—Mr. A.R., aged fifty-six years, was seen on July 19, 1946. He had had high blood pressure for twenty years. Three years previously he had had a proved coronary occlusion with a lot of pain which lasted off and on for one year. Five weeks before stomach trouble had developed, he had a sinking feeling in the "stomach", and lost all confidence when it was bad. He slept very badly. His systolic blood pressure was 215 and his diastolic pressure 140 millimetres of mercury. He had no pain in the abdomen after food. There was a trace of albumin in the urine. He did a lot of thinking in bed at night time.

On September 6 he felt much better; he had a feeling of confidence, was sleeping better, and had no "sinking" feeling or other symptoms; his indigestion was a lot better.

This patient's blood pressure readings later became 180 and 116 millimetres. His blood pressure family history was unsatisfactory. He had been told by his doctor that the sinking feeling and insomnia were due to his blood pressure. Despite the fact of his having a high diastolic pressure and a fairly bad history, he did well when assured that emptiness and insomnia were not due to blood pressure.

The climacteric is another subject with which a great deal of trouble is associated and the public are largely to blame for it. No doubt an occasional psychosis develops at this time and some patients suffer from uterine hemorrhages, but the amount of talk about the terrible conditions of the climacteric is out of all proportion to the reality. Most of the neurosis and worries due to the climacteric are avoidable and can soon be removed by proper reassurance. Give the patient a cause for the anxiety and she will get it and will not recover readily. If the patient is told that there is no reason to worry in the climacteric she will recover quickly and all the associated symptoms will rapidly disappear.

The climacteric has such a bad name that it is only necessary to "point the bone" for a very short time at a patient who has a few little worries to make her a very anxious patient with tiredness, exhaustion, insomnia, flushes *et cetera*. This climacteric with blood pressure is exaggerated a million times by the public as a cause of ill health—and no doubt as a result of this exaggeration very many cases of neurosis arise.

The real fact is that the general view or attitude of the public to this very natural process is dependent on the profession's common view about the condition, that it is accompanied by numerous neuroses, hemorrhages, mental troubles *et cetera*. This view is the main cause of the many cases which occur; the condition itself is not responsible. What is required is a change in our attitude and the simultaneous education of the public.

CASE IX.—Mrs. K., aged forty-six years, complained of headaches and of pressure on the top of the head; she felt nervy and was always tired, even on rising. She had attacks—suddenly she felt as if the whole body was on fire, and as if boiling water was flowing in her veins from the top of her head to her feet. Sometimes she had daily attacks for two or three days; sometimes they occurred once a week. The head worried her most, and everybody said that her symptoms were due to the "change of life". Her systolic blood pressure was 200 and her diastolic pressure 94 millimetres of mercury. Her health was very good. Her real worry was her mother-in-law, who was very difficult to get on with and was always very aggressive. The patient, her husband and three children and the mother-in-law all lived packed together in a small house of four rooms.

CASE X.—Mrs. S., aged fifty years, complained of flushes and sweats, and of becoming all hot and nervy. Women forced their opinions on her of the "dreadful change". For treatment she was told that she had nothing to worry about, that the flushes were not serious, and that she should not listen to her women friends—that she had no reason at all to worry.

I am strongly of the opinion that the vast majority of all symptoms during the climacteric or associated with variations in blood pressure are not due to the condition itself, but to worry about the possibilities, because the two conditions have such a bad and dreaded name.

Women will talk and talk very freely on these subjects, and unfortunately they talk of all the worst cases that have ever happened; hence they frighten their anxious or

nervous neighbour who has been told by her doctor that she is suffering from change of life.

Our policy as a profession should be to realize the harm that is being done and to counter that policy by telling patients that their condition is natural, is not serious and in most cases not likely to be serious, and not to worry about it. The woman must be warned against her friends. If the patient is told that she has a high blood pressure or that she has climacteric symptoms she will certainly worry about the condition—the public will see to that.

Asthma.

Asthma has a very bad and dreaded name among the public. It is associated with very considerable fear in most cases, especially when the main basis is anxiety. Patients often think that they are incurable. A great deal can be done in all cases of anxiety asthma by getting to the bottom of the anxiety and by giving a good outlook instead of saying: "You know asthma is incurable, so you can't expect perfect health." (See Case XXXIV and the following.)

Mrs. McH., aged sixty-two years, had fairly severe chronic asthma. Her doctor told a friend she had hopeless heart failure and the friend repeated this to the patient. She was seen by me over two years ago and her condition was diagnosed as bronchitis and asthma. She was treated with injections and reassurance that her heart was sound and that she would get better from her asthma.

During her illness she lay awake at night, thought of herself being lowered into her grave, felt very ill and was depressed. She has now been well for two years. An occasional attack is easily cured.

Investigation of a Patient's Condition.

On interviewing a patient for the first time one immediately tries to assess whether his condition is due to physical illness, or anxiety state, or both. Both are common.

The occasional psychotic depression is very rare in ordinary medical practice and is often periodical in type; and one must keep in mind the odd schizophrenic who comes along with anxiety symptoms. One can generally spot them at once.

One asks the patient: "How are you? How do you feel? What do you complain of?" The answers to these questions give one a very important guide as to whether you are dealing with organic illness or an anxiety state.

The patient says one or more of the following: "I feel rotten", "I feel exhausted", "I am dreadfully tired and have giddy turns", "I am suffering from blood pressure", "I have headaches, pressure on my head or part of the body, or a horrible feeling in the back of my head", "I think I am suffering from the change", "I have hot flushes all over or in the face or elsewhere", "I can't sleep", "I lie awake all night", "I go to sleep and waken at 1 a.m. and can't sleep again", "my heart palpitates dreadfully and I hear it in my ears", "I feel pulsation in my abdomen", "I feel I am going mad", "I get the shakes [or trembles]", "I get a horrible emptiness in the pit of my stomach".

Alternatively the patient says: "I am short of breath", "I have a severe abdominal pain or severe chest pain", "I have swelling of my legs or severe indigestion".

One soon realizes that in the first case one is probably dealing with an anxiety state and in the second with an organic state. One meets many mixed organic and anxiety cases, and it is necessary to know to what the anxiety symptoms are due so that one can treat the patient in the best way.

The next important thing, after getting a hint as to a likely diagnosis, is to make a most complete and thorough physical examination of the patient. In a case of suspected neurosis one must satisfy oneself that there is no organic disease causing tiredness, debility et cetera, that there is no evidence of tumour of the brain, diabetes, uræmia, phthisis, or other physical conditions causing rare symptoms. An eye examination by a specialist is sometimes desirable to check the ophthalmic causes for headache, or to find evidence of organic disease of the brain et cetera.

It is most important to make quite sure and if need be to have specialist consultations and special pathological tests carried out.

With careful examination and careful history taking one can generally satisfy oneself in the majority of cases. The pure anxiety patients are often in fairly good physical health, but by no means always; quite a number are very ill, and feel ill. Very many cases of organic diseases are associated with anxiety symptoms. On the other hand anxiety patients generally give a train of well-developed symptoms and one generally can make a diagnosis of anxiety state on those symptoms.

Why is a physical examination necessary?

First of all to make quite sure where you stand, so that you will be able to make a correct diagnosis. It is essential to make a complete diagnosis so that one can be quite positive in giving a good prognosis. It is no good saying to a nervous patient: "I think you will be all right. I think your heart is strong and healthy." One must be sure.

Secondly, a patient has a wonderful belief and great satisfaction in complete physical examination, and this is one very important method of gaining the patient's confidence. The patient should be examined at each visit whether it is necessary to do so or not. It helps in treatment, especially in maintaining confidence.

Having decided that you are dealing with an anxiety state, your next step is to investigate the causes; and, as patients are very shy about telling facts, it is generally wise to ask friends and others to leave the room. Anxiety states are always due to frights, worry, upset et cetera of some sort, or (very important) to ill health, either of organic origin or due to anxieties of some sort or another, or both.

On asking if the patient has any worries, one often receives the answer, "Yes", and quite often gets an idea of the cause and troubles which have led to a breakdown.

But, on the other hand, patients who are obviously in a nervous state say: "No, I have no worry." There are two reasons for this: (1) The patient does not wish to tell you. He has a worry and knows it, but insists on not disclosing it. You cannot help him so much, but can explain that his symptoms are due to some worry and are not really very important. Tell him to cut out his worry or settle it. (2) He does not know he is worrying, and this is very common. If you ask if he does any "thinking" he may say: "Yes."

Patients often say, "I have nothing to worry about. No financial worries, no home worries", but they often admit worrying about their health, and very often worries or anxieties come of that ill health—there is a vicious circle.

Cases in which the patient said "No worry" or did not know the cause of the symptoms are exemplified in the following.

CASE XI.—Mrs. M., aged sixty-two years, had a lot of rheumatic trouble with pains in the hips and knees. She had been treated at length for arthritis and had considerable fear of permanent invalidity later. This fear in joint cases is very widespread, even when there is very little real joint trouble; and more so if there is mild or more severe joint involvement which would not invalid the person for many a year. She had a gastric empty feeling which she thought was due to cancer. She had been worrying for months over the arthritis which was of no consequence. I found that there was nothing important wrong with her knees and hips and looked for a cause of her worried state. I found after some trouble that there had been quite considerable upset in connexion with married relations. This worry had really been transferred to the joints, and the patient thought her joints were very badly affected. There was nothing wrong with her joints, but she had a few neuritic pains in the thighs.

CASE XII.—Miss C., aged twenty-one years, was said to have a cold. She had no cold. Her relatives worried about her. I suggested that she was worrying. She said most emphatically, "No", and started to weep—very suggestive of worry. I had a quiet talk with her next day. Again she gave a complete denial. I told her mother my suspicions about worry as the cause of ill health and her mother admitted a recent broken engagement.

CASE XIII.—Mrs. B., aged fifty-nine years, had very severe headaches for three days all over the head; otherwise she was quite normal. Her general health was excellent. When asked whether she had any worries, she answered: "No." She had had a son a prisoner-of-war and had worried a lot in the past. I was told by a member of the family that a relative, who was an officer in a big hospital, had told her how dreadful it was that so many mental patients were going into the hospital. This provided an answer to her severe headaches. She worried about the possibility that she might become mental after having a lot of anxiety for three years with her other son who was a prisoner-of-war in Japan. Referring to this information, I said to her: "There is nothing mental about your headaches." She was relieved and said: "I thought there might be." She has greatly improved since and the headaches have disappeared.

CASE XIV.—Mrs. L., aged fifty-four years, had a lot of indigestion, and pain in the back of the neck. Examination gave negative results. I suggested that she had a lot of worry. She said that she had not been worried at all. I said that her health was quite good and the condition was due to worry. On my leaving the house, the patient said that she thought that she had a tuberculous throat, obviously a great cause of worry.

CASE XV.—Mr. J., aged sixty years, a hard-working man, said that he had abdominal pain, felt very tired and miserable and unfit for work and asked for a medical certificate. I thought that he might be worried. I found no organic abnormality on examination. He said that he had no worries at all. On account of knowing the man and well respecting him as an absolutely honest person, I gave him a certificate for a week off from work. He was to report in seven days. His pain was better, but he "felt rotten". When asked whether he had any worries he said: "No." He also said that he slept well and had no flushes. He had none of the ordinary symptoms of worry. I could not make a diagnosis of worry till he said: "I come home and can't even be bothered with the wireless which I always enjoyed." Obviously worry was a big factor. I tackled him straight and he admitted great worry for a long time over a son who was drinking badly. His case was explained to him—the symptoms were due to worry. Suggestions were made that he should help his son in the best way possible, and having done so that he should be content that he had done his best and stop worrying. He did well very soon.

CASE XVI.—Mrs. H., aged forty-seven years, was seen on August 28, 1946. She had not been well for five months; she was nervy. On the previous Friday night she suddenly had a weak, sinking feeling in the epigastrium (no pain) and felt as if she was going to die. She sat up quickly and thought it too silly to be mentioned; she took deep sighing breaths and had a breathless sort of feeling. On the next night she had the same sort of feeling and her heart palpitated a great deal; she had to breathe hard to get her breath, and she was trembling all over. She said that she had no worry or fright. She had lost her first husband suddenly twelve years previously, but was happily married again. Examination revealed a systolic blood pressure of 136 and a diastolic pressure of 94 millimetres of mercury; she was a very healthy person in every way. Severe exercise tolerance tests of running on the level, running upstairs *et cetera* gave perfect results. The patient was seen every week and two weeks afterwards was feeling very tired and miserable and said: "I don't think I can get well." She was reassured, and on September 18, 1946, she said: "I have no interest in anything." X-ray examination of the chest revealed no abnormality. During these four weeks, as you observe, the patient was extremely tired and miserable in every way. I could not find a definite immediate cause for all of these symptoms except that she had lost her first husband suddenly twelve years before and she was terrified of the breathless attacks and palpitation. She was reassured each week that her health was absolutely perfect, she was told there was nothing wrong with her heart or lungs, it was explained that the palpitation although feeling dreadful was not of any importance and would not do her any harm and that the breathing was not important, although distressing to her, and, therefore, she had no reason to be afraid of either of them. She wanted an X-ray examination, although I told her there was no need for it. It was carried out with a view to extra reassurance. She was most difficult to convince, she seemed to be satisfied each time, and at the next visit she seemed to be as bad as ever. In the second four weeks she had similar but less severe symptoms. I discovered that a woman friend (a know-all) was always talking to her about her symptoms. These chats were stopped very promptly. The patient gradually improved and made a splendid recovery in three months.

The Time Factor.

One can often judge the time of onset of anxieties from the statements of the patient, and this helps greatly in gaining his confidence. The following cases illustrate this point.

CASE XVII.—Master N., aged four years, had had enuresis for six months. I had a confidential chat with the boy after asking his parents to leave the room, and found that he was frightened of giants from a story told him by relatives. The parents had never known his fear. He was reassured and told that he had no reason to fear. The trouble stopped in fourteen days and he has been well since.

CASE XVIII.—Mrs. B., aged twenty-nine years, was seen on November 14, 1945. She had lost her husband as a prisoner-of-war of the Japanese at sea in July, 1942; she had heard the news only a month before. She was very worried and depressed. She could not sleep, but her health was good. I said to her: "Did your husband ever say 'don't worry'?" She said: "Yes." She was reassured with regard to her general health which was perfect, and it was explained to her that all her symptoms were due to worry about her husband and not to her health or any other nervous trouble. It was pointed out to her that her husband had said, "Don't worry", and that out of respect to him she would be more than justified in accepting that advice absolutely. She was a sensible young woman and made a very rapid recovery in five weeks.

CASE XIX.—Mrs. C. K., aged sixty-one years, had always been a little nervous and subject to upsets and emotions. Now, she had "terrible headaches" with dizziness and depression. She was tired to the degree of exhaustion and had pressure feelings all over the vertex and occiput with marked insomnia. These symptoms had all come on about three weeks previously. It was obvious that she had a very considerable worry, and that it had occurred about a month before. I said to her: "You have had a big worry about a month ago." She was surprised and did not want to talk about it, but finally revealed that a trusted friend in a good position had borrowed a lot of money from her and she had made the discovery about a month before that his position was very doubtful and her money the same. Fortunately things turned out all right; and she improved slowly. It took a good while to get over her anxieties which had soon spread in other directions.

If the worry symptom is of short duration one can generally say that the cause was a few days before that. Again, if it occurred six or twelve months before, the cause probably took place during the few months preceding the onset. If a worry is very acute with marked insomnia, no sleep for nights, shakes, palpitations *et cetera*, the cause is very close at hand.

Quite a lot of confidence can be gained by telling patients about the time of onset of their worries, without, of course, revealing that they have just told you how dreadfully worried they suddenly became quite recently. For example, if a patient tells you he has had insomnia, flushes, palpitation *et cetera* for a week, you can often suggest that about a week or two previously he had a lot of worry or upset, that is, the cause was worry and the time of worry was a week or two before. One can use this policy in many cases of all sorts and it is of great value.

Direct Diagnostic Method in Anxiety States.

If you sit down and ask a nervous patient to tell you his or her story, you often gain a good deal of information slowly, but have to listen to a lot about all sorts of things which are irrelevant. This wastes a lot of time. I find that one can frequently make a direct attack on the patient.

Having found that one is dealing with an anxiety state and having been told some of the main symptoms, one proceeds to the physical examination without saying much. Then say: "Your blood pressure is satisfactory." "Oh, what a relief," says the patient. You can then often say: "Those headaches, flushes, palpitation, depression *et cetera* which you have had are not due to blood pressure as you thought. They are not important." After heart examination and other examination one can say: "Your weakness and exhaustion are not important. Your heart is strong, but you smoke far too much." It is easy to see evidence of heavy smoking—in the face, duskiness; in the throat, redness; on the teeth, blacking; on the fingers, staining; and sometimes an irritable cough. One takes the patient

a little by surprise sometimes and hence gains more confidence.

During examination you inquire carefully about worries of the past, especially frights or big worries, nervous breakdown, domestic, housing, financial, bereavement or other symptoms, noting especially the time factor. By getting a hint from the patient, you can in turn tell him quite a lot about how ill he was in a previous breakdown about which he may speak, how he suffered loss of sleep, depression of mind *et cetera*.

I find that direct attack in conjunction from time to time with careful detailed inquiry helps a great deal in more quickly obtaining details of the case, and also, very important indeed, in gaining the patient's confidence, because you do not ask him about all his worries, and then tell him he has had the worries just recounted. You get in first and tell him he has worries as the cause of his illness.

During the examination one notices any questions put. "What is my blood pressure?" "How is my heart?" "Have I a growth?" Note what patient has been told by his physician in the past about his health and organs.

Smoking, Tobacco, Cigarettes.

I find that smoking is a powerful factor in many nervous states. I believe that it causes depression and feelings of tiredness and exhaustion, especially in patients who do not take much exercise. The hard-working wharf labourer or navy can smoke very heavily without the effect it would have on a clerk, who sits in his office most of the day. Reduction of smoking from four or more ounces a week to one or two ounces, or even cutting it out altogether, in some cases has a very helpful influence on the patient.

The Patient's Attitude during Investigation and its Bearing on Treatment.

Now are we to take it for granted that all worried states arise in childhood and that we must psychoanalyse everybody over a period of two or three years before getting results? No, certainly not. Too much time would be wasted.

While some patients may have had frights in childhood which influence them and make them perhaps a little more susceptible to worries in later life, yet from a practical point of view I maintain that generally one or two main worries cause the anxiety state and that these are generally well marked and definite, and can frequently be discovered, even though one has to go a good way back in life. (See Case XXXII.)

Patients often say that they have several worries, but, experienced by much practice, the physician can generally spot the one that is causing the trouble, the real one, although patients not infrequently try to mislead by blaming unimportant worries.

Explain to the patient that this is the main cause of the upset and how he need not worry any more and will soon get well. In simple cases the patient can be easily cured, but many cases are much more difficult. If you feel that you have reasonably got to the bottom of the case, reassure the patient, promise a good outlook and ask him to report in one week. In a week's time the patient says: "I am much better", or "I am no better at all".

In the first case, examine, have a talk, reassure the patient again and ask him to report once a week or once a month for a few weeks or months as necessity indicates. It is not sufficient to see a patient once, even if you are sure you have discovered the whole worry; you must keep in touch with him.

In the second case, more investigation is necessary to find if anything is still worrying the patient. If he says, "I have no more worries", and if, after careful investigation, you do not suspect any more, then he is probably worrying about his own health, especially if nervous symptoms are still present or if he is not sleeping or is unhappy, and so on.

Sometimes a patient says: "Of course I am still worrying, I can't get it out of my mind." In that case this method is often useful. Tell the patient that memory of the anxiety,

like all memories, frequently crosses the mind and keeps on recurring much more if there is anxiety in the memory. Memories (even fear, or anxiety, memories) occurring every minute do not harm and do not upset the patient. Memory is involuntary. What does upset the patient is voluntary thinking, or worrying about the particular memory—the patient's "thinking reaction" to his worry, frights *et cetera*.

"Thinking" or "worrying" is voluntary and under the control of the will; and can be controlled greatly in many cases, once a person has the fear of anxiety explained, and also that it is only the constant thinking that maintains the fear. Tell them that the fear will recur from time to time. Immediately it comes to mind, do not allow it to be thought over again. Restored confidence as a result of careful investigation and good prognosis give the patient great help in battling through to a good result.

"Thinking" or "worrying" can be controlled at first, but is more difficult to control later on in that "thinking" session. Patients go on "thinking" till they are tired or weary and then steady up till next day or night, when another session begins. Often one is quite sure of one's ground, and the patient, because of over-anxiety, does not believe you. Everybody, even in normal health, worries quite a little every day, especially if not fully employed.

CASE XX.—Mrs. M., aged thirty years, felt her nerves "going" in the face and all over the body like pins and needles, and had to keep rubbing the arms and face. She did not sleep for two or three nights. Each day she had weak feelings all over and her heart palpitated very quickly. She thought that tiredness from overwork brought on the symptoms. After careful examination I said: "If you believe me, you will get well." But she answered: "How can I get well. It is born in me, look at my mother" *et cetera*. I said: "It is not born in you and you will get well." She stated that she thought her heart palpitation was the cause of her bodily weakness. It was explained to her that weakness was due to worry and not to her heart, or to the palpitation of the heart.

In this case the patient formed the opinion that her heart was weak and tired, that palpitation made the heart weaker and caused bodily weakness of various sorts. Fear of palpitation and of getting weaker with attacks caused shakes, especially when the heart palpitated also. She thought palpitation would weaken her body more and more and she could not get well. Her illness was partly caused by care of a young baby while her husband was on night guard duty away from home.

Examination proved her to be a healthy woman with a sound heart, although she had lost one stone in weight and had a poor appetite. She was reassured about her heart; she was told that the heart was not causing bodily weakness, that bodily weakness would not get worse, that the shakes were due to her fear of her heart and weakness and that she would get better. She sharply retorted (a not uncommon experience): "So there is nothing wrong with me, you say." "No, I say that with your sick baby and husband away you have got into a nervous state, but will soon get better. The palpitation will not harm you; therefore, disregard it or at least do not be frightened of it and it will gradually subside. The weakness will also go." Theoretically she should soon be cured, but she proved resistant; she did not believe me about her heart and weakness *et cetera*. I had to pull her up and tell her plainly and firmly that she did not believe me and had no faith in me. She said she had. I told her plainly I would not treat her unless she believed in me. I endeavoured to hold her confidence at all costs. Later she said that she could not walk to do any shopping; she was too weak. I sent her for a half-mile walk from the office which she did well, and examination at the end of it was very satisfactory, the heart, pulse and breathing being normal. This was explained to her. She did well, very well, and gradually improved into a very satisfactory state of health without palpitation or weakness and sleeping well and gaining weight. The above period covered several weeks. She was better than ever one year later.

(See also Case III.)

"Thinking Reaction" in Children.

Beside stories of giants who eat children, or ghosts who prowls about are told by relatives to young children. The child is interested at the time, but later starts to think,

"thinking reaction", and then begins to get frightened, and with more fear there is more thinking and the patient soon becomes very nervous and has dreadful nightmares of which the parents often do not know the cause.

Confidence.

Confidence is lost more or less in all these anxiety cases and must be restored. Once confidence is lost, doubts and unbelief occur about all symptoms and all statements made by the physician. Confidence is a particular state of mind of a person in which that person feels perfectly happy with himself and others—when he does not fear, worry or fret, get anxious or upset over things; when he has no doubts about health or anything else; when he feels that he has a grip on life and on his daily affairs and thinks he is the equal of his fellow man.

Loss of confidence is due to a patient's mental reaction to worry and anxiety. This term "mental" does not imply any evidence of psychosis. In all cases, if the causation of anxieties is accident, illness, war worries of any sort, the patient, as a result of his own thoughts or as a result of advice given by friends, starts to "think" or "worry"; this thinking can be classed as the patient's "reaction" to his own upsetting influence. It is a very important factor in all cases. Stop his reaction by restoring confidence, by giving reassurance that, although dreadful, the things that he "thinks" are quite unlikely, almost impossible, with ordinary careful treatment. This mental reaction is a very big factor in all soldier or prisoner-of-war anxieties. If, as a result of some difficulties in getting back to civilian life, the patient worries, the worry is inclined to increase and to be transferred to war fears or anxieties, and the latter in many cases are then blamed, even though they were not previously the cause of worry. Try to avoid the mental reaction by kindly advice, reassurance, confidence in the future, and try to get friends not to be always pointing the bone.

A Few Words about Children.

Children are born with confidence. Confidence in children can mostly be retained by playing with them a little, talking about their clothes and ribbons, telling them you like them. They will reciprocate readily. Children often suffer from nightmares, neuroses and other nervous symptoms including loss of appetite, doing poorly *et cetera*. The nervous factor is one of the causes worth investigating. After gaining the child's confidence, ask the mother to wait in another room and say quietly to the child with nightmares *et cetera*: "What do you get frightened of?"

They will frequently tell you without hesitation: dogs, dwarfs, giants, ghosts, machinery of various sorts including tractor engines in the street or the vacuum cleaner in the house.

The fright about ghosts and giants is often the result of bedtime talks or wireless stories.

CASE XXI.—Master E., aged three years, on December 8, 1943, was very nervy and losing weight; his appetite was poor and he had had a nasty cough and wheezing since the previous week. He was frightened by a steam roller, the vacuum cleaner, puppies, spiders and rats, not by trams, trains or buses. He had fear of thunder and of certain items on the wireless.

On January 27, 1944, a wonderful improvement on the whole had taken place and the child was eating better. The cause of fear, unknown to the mother, was explained to her. She was instructed to approach the steam roller when stationary, to talk to the driver who would give the boy lollies and make friends at once—arrangements having been made previously. The boy now lost his fear. The steam roller was probably his big original fright.

CASE XXII.—Master V., aged five years, had terrible nightmares, screaming and yelling. The discovery was made that he was frightened of ghosts as heard on the wireless, of tales told to him by relatives, and of the "Seven Dwarfs" film seen by him. The mother did not know anything about the cause of his nightmares, although she was greatly worried by them. The whole matter was explained to the boy and he did well.

CASE XXIII.—Master D., aged four years, was travelling in a motor truck struck by a train. He was picked up on the road apparently quite unconscious and taken to the

hospital which was situated one hundred yards from the railway line. Any time a train came along he cried pitifully. He could hear the train before the nurses, who had to run to him. Attempts were made to familiarize him with trains by putting his cot in the yard one hundred yards from where the trains passed and with nurses waving to the trains. He cried more. He had to be made to face up to trains, but not by force. I talked to him about all the nice engine drivers who gave nice little boys lollies, then took him in my car to the railway station, talked to him a lot about nice engine drivers. At the station (by arrangement) he talked to all the staff as engine drivers and they gave him lollies. A train came in and he took no notice. We then walked to the stationary engine and talked to the driver. He was quite well after that. He never cried again. His father writes after fifteen years: "He is no more afraid of trains or cars after the accident than before. He is now 19 and a fine boy. Please accept my thanks. . . ."

In all cases of anxieties the patient must face up to realities. A kangaroo, if hunted, allows fear to control its action. When cornered it will put its back to the tree and fight. Anxiety patients must face facts and fight, and with proper advice, help and assurance that this can be done. It will be done by the patient gradually.

Nervous Constitution and Heredity.

When you tell patients that they will soon recover, they often say: "But I have always been nervous from birth", "I was born like that", or "I have a nervous constitution". The family history is, of course, worthy of consideration in every case if it can be obtained without undue stress. (See Cases XX and XXXIII.)

This nervous predisposition or nervous heredity or whatever you call it is of small importance, and, if it is ignored, you will have a great deal more hope of recovery of patients and you will get far better results, far exceeding your expectations. This idea of patients having a nervous heredity is a "bone" being pointed at the patient like many other bones in this work.

There is far too much talk of nervous make-up in order to satisfy an unfortunate patient. Some doctors say sympathetically: "Yes, of course you can't help being nervous because of your nervous disposition." The nervous predisposition idea certainly has been a great factor in preventing a great number of patients from getting better or improving as they should and is a big tactical error in treatment. (I am not, of course, referring to the poor unfortunate uneducated or more or less mentally deficient poor souls we sometimes meet, but to the average person.) These people feel that there is a good reason to prevent recovery; hence they doubt you so much that confidence is not easily restored.

If we adopt the idea that "nerves" can be cured or greatly relieved in the majority of cases, we get far better results, and I am sure this is the correct attitude and go as far as to tell most of these patients that their nervous make-up does not matter at all, and results more than justify this statement.

Occupation is a most important point in cure. Many patients are able to do their day's work and continuance of work is correct if it is at all possible. Hobbies should be used extensively, even if the patient talks about his hobby all day long, as long as he does not talk to you! There is no doubt that the fully occupied mind is easier to deal with.

People, even ill people, should not be too readily retired from business unless they have good hobbies. I often think it is better to take some risk in many cases rather than have a nervous wreck on one's hands. There is nothing so sad as old people retiring from active business to a comfortable old age after years of labour. They often—too often—retire to a life of misery.

Prognosis: Fear and the Treatment of Fear.

Against great or sudden stress, fear in many cases cannot be controlled; but when the stress no longer exists except in memory, the fears can be faced up to and controlled in many cases, provided the patient is confidently told that he can control it gradually. You must have his confidence or you waste your time.

In all cases of anxieties, fears *et cetera*, if there is any stumbling block to recovery, then recovery is much more difficult. Do not allow "nervous disposition". Do not say "the condition has lasted too long". Do not put any "ifs" or "buts" into your outlook.

The prognosis given and the manner of its delivery mean more to a patient than anyone knows. Be dogmatic after careful examination. Make sure of your grounds in all cases. Get all the facts. If you can gain the patient's confidence you win the day. The more complete your physical and psychological diagnosis, the greater the patient's hope of recovery. Be absolutely honest with your patient. Do not bluff him. Give him confidence on the results of your diagnosis of his case.

The fright, annoyance *et cetera* are not the real trouble in many cases. A very brave person may disregard facts which would frighten others, and would not "react" or "think" about the fear, and his nerves would not be affected. A patient may be in a bad motor accident and may not be affected unless he begins to think about all the circumstances and until told by his friends: "What a shock you must have got." He then begins to react and think it all over and his nerves may then give trouble.

Therefore it is important in all cases not to allow any suggestion of trouble to be given to people who have been ill or in accidents, or who have high or low blood pressure, or who are near the climacteric, or who have suffered bereavement *et cetera*.

Nerves or anxiety states are mostly caused by the patient's mental reactions, or thinking, over and over again. This thinking about worries and trying to solve them is a very potent cause of continuing anxiety states, and the patient with the help of friends often gets into a very anxious state for a considerable period before being driven to seek help.

Do not point the bone even in minor ways by saying "You have blood pressure, change of life, nervous disposition", or in any way retarding or hindering recovery.

If the patient feels or is told, or suspects there is any reason why he will not recover he will be inclined to exaggerate that reason and recovery is greatly delayed; therefore, give him no reason, and if he has any, try to disprove it.

If you say the patient will get well you are more than half-way to cure. If you offer any doubts, even minor ones, in your outlook, you delay recovery.

An important class of patient includes the returned prisoner-of-war who has gone through a great deal of anxiety and suffering and has made good for the first year or two. I noted in the newspapers recently that some of these patients were inclined to break down after two years of good recovery; one told me lately that he had passed two university years, but now suffered some lack of concentration. His health was good and he was thoroughly reassured and told not to think about it again.

I believe that this can be prevented in many cases by taking a confident attitude and not allowing for one moment that possibility to dwell in the patient's mind. The honest and correct view is that the "nerves" will do well, unless the patient is overcome with illness or misfortune. We are not justified in permitting or allowing any other view.

The big point is to give the patient satisfactory occupation, proper care and attention, and not for one moment to allow the idea that a reaction must follow sooner or later.

CASE XXIV.—Mr. E.R., aged twenty-two years, a returned soldier from the islands, was depressed and miserable, and could not sleep; he felt "rotten". He had been ill for six months and no improvement had taken place. His army friends all said, on meeting him from day to day: "You look pale and thin." He worried so much about these constant remarks that he thought he would become mental. He thought it was a late reaction to war service. "A few of us got together one night and said: 'We felt good in the islands, but it is telling on us now.'" When not sleeping, but thinking, he would wonder what was wrong, whether he was going mental or if he had chest trouble *et cetera*. He got to the state of asking people: "How do I look?" If they said, "Pale and thin", he was depressed. If occasionally

they said, "You look well", he was very bucked up. After careful examination I said to him: "Your physical condition is good, you are worrying and smoking too much, hence feel as miserable as you do." His main worry was over great difficulties with the prospective father-in-law. A good outlook was given, he was told that his condition was not due to war service at all, and in a week he was an entirely different person.

This is typical of a great number of soldier patients, returned men or returned prisoners-of-war. Difficulties of settling into civil life, dissatisfaction with salaries and housing conditions all cause lots of worries. Then the worry is transferred to and believed to be due to a late reaction to war service. The public encourage the latter view. Having found the cause of the trouble, as in this man, we can help the returned man very greatly.

There is a great tendency for anxiety patients to improve, but they cannot quite "make it" by themselves.

The outlook in the majority of cases of anxiety state as seen in medical practice is very good. Most patients recover to a very great extent until they are in good health. In very few cases does recovery prove difficult.

A small proportion of patients will not be satisfactory and will continue to argue with you and to annoy you by the hour, and no matter what reassurance you attempt, you will not get a satisfactory result. They are few and far between and probably should be sent to the psychiatrist for shock treatment after a fair trial. You can reduce their number very greatly with increasing experience. If one had many of them, one would soon be a nervous wreck oneself.

Old people and mentally subnormal patients are sometimes more difficult.

In reassuring the patient, especially when your progress is so much better than expected by the patient, do not allow overjoy in the patient. Say: "I am giving you good news, but you must accept it calmly and not get overjoyed or excited." Overjoy at first causes some reactionary depression.

Special Subjects.

I may say a few words only on special subjects.

Joint Conditions.

Joint conditions are a very common cause of anxiety, even if very mild and unimportant. Patients become anxious about being crippled and needing care by others.

Headaches and Head Pressure.

Headaches and head pressure may be severe. The patient attaches a sinister meaning to them. He thinks they are of serious import. Reassure the patient that although the pains are severe, they are not important and do not mean disease. The patient will soon recover.

Palpitation of Heart.

Tell the patient that palpitation will never do harm, and that therefore he should not be afraid. Tell him that every time palpitation occurs, it should be disregarded and not feared; that no heart disease is present and that therefore the palpitation does not matter and will soon go; that if he allows himself to become frightened, it helps the palpitation; that he can control that fear.

Sleep.

Sleep generally improves soon. An important point is to say, except in acute worry, that patients can do with very little sleep for long periods without harm, and that most patients who do not sleep generally have sufficient for the needs of health. Nightmares and dreams are often due to the patient's fright or fears which come out when control is relaxed by sleep. Nature generally takes care of sleep. You must find the cause of the worry giving rise to insomnia and you then get dramatic results. The more experience you have of investigation of these patients, the more likely you are to help them. It takes years to know the subject, but you can all greatly improve your technique, very especially with some understanding of these cases, and with the knowledge which I hope I have been able to give you.

This knowledge is very difficult to obtain in daily medicine, except by gradual clinical investigation over many years and by adding the small pieces together till one has gathered a veritable mountain of knowledge about it. Nobody seems to be very conversant with it; there is so much to learn. It appears to follow very definite rules.

It has taken me very many years, picking up little scraps of information here and there, little ideas, little methods, and learning the best methods of approaching each patient, and carrying through a successful investigation and treatment, maintaining the patient's confidence throughout and obtaining the important facts of the case without offending or upsetting the patient.

Masturbation.

Often a youth comes along with some simple complaint, such as a pain in the knee without cause, or a sore throat which he says is persistent; and does not show anything. He looks miserable and pale, and may admit being depressed. When questioned, he probably admits to masturbation. He must be reassured. Do not frighten him. Say no harm will follow if the practice stops at once, but it must stop. A promise is asked and the patient should report.

A Mid-Way Group: Organic Disease and Anxiety.

There is an important mid-way class of patient who has organic disease and anxiety.

A few synopses of cases may illustrate this. (See Case VII.)

CASE XXV.—Miss K. had a systolic blood pressure of 200 and a diastolic pressure of 100 millimetres of mercury. She had been six months in bed with hemiplegia (thrombosis). She had been told she would never do any good. After treatment she got up soon and went back to work; she has been working for four or five years now. She had been very miserable, and was afraid to get out of bed in case of having another stroke.

Medicines and drugs should not be relied upon in many cases.

The idea of medicine is such an inherent part of our civilization that one must fall in with the times, even though one knows when getting good results that it is the advice and reassurance which are the great means of success; the patient generally attributes it to the medicine.

Give some simple medicine or powder, but nothing strong. I find in practice that far too many barbiturates are given. Occasionally it is necessary to help sleep, especially in elderly people, and sometimes bromide or other sedatives may be used for a short time.

Imagination is a very bad word to use. Patients resent the idea of their illness being imaginary, even though there is no physical basis for it. There are a number of words or ideas which the general run of patients fear: neurasthenia, insanity, blood pressure, change of life, growths, asthma; and the less they are used, within reason, the better.

Methods of treatment may be hinted at in the following extra cases.

CASE XXVI.—Mrs. G. swallowed a safety pin some months ago. She coughed up a little blood recently. She was worried about the safety pin all the time, although she said that she was not, but later admitted it. An X-ray examination revealed no foreign body. She now feels better. She admits that she worried greatly.

CASE XXVII.—Mrs. C. had pain in the right breast for six months. This is quite a common symptom. The patient thought that there might be something wrong. There was no evidence of growth, which was the patient's anxiety.

CASE XXVIII.—Mrs. T., aged sixty-four years, complained of shakes and depression and of having had no sleep for a fortnight. She thought she was going mad. I said: "Although you have these symptoms, examination proves your heart and organs to be good and you are not nearly as bad as you feel." The patient was greatly relieved. The facts are that she suddenly discovered that her husband had deserted her, left her without support, also took some of her money.

CASE XXIX.—Mr. L.A., aged fifty-four years, said that he had an exhausted feeling over the heart; the heart

stopped. He did not know whether he was exhausted after a day's work. He had a feeling of a pulse throbbing all through his body. He had been told years before that he had a tired heart. He was now told there was nothing wrong with his heart, that the exhaustion feeling and pulsation were of no consequence. He accepted the explanation and rapidly recovered.

CASE XXX.—Miss M.C., aged fifty-nine years, single, had pain in the right side of the face especially the upper part of the cheek near the eye; she had some pain in the forehead on the right side. The pain started after some teeth were extracted and her "nerves were bad". She had a lot of worries, especially war worries. She thought she might have a growth in the face where the teeth were removed; she spoke frequently about the growth, obviously quite a big factor in her mind in connexion with her case. Next week the pain was not so continuous, not so severe. If she became upset, the pain came on, or if the blankets touched the affected part. Again she spoke about the growth. A week later the pains gradually became less. Six weeks later she felt wonderfully better, hardly ever had pain in the face, and it did not affect her in any way.

This was a case in which the patient had had some pain with the teeth. The fear of the growth probably helped to continue the pain. The X-ray findings and absolute reassurance that there was no growth were largely instrumental in her recovery. Two years have elapsed and no more pain has occurred.

CASE XXXI.—Mr. R., aged fifty-three years, complained that mucus kept coming down the back of his nose. He had bad headaches. X-ray examination of the sinuses and a specialist's opinion revealed no abnormality. The patient was still worried about the phlegm and dreaded the winter. He had had no sleep for nights and nights; and had had three months off duty. It appears that he had a very responsible position and had reason for considerable fear of violence. He had not realized that it was the personal fear that was affecting him and that fear was transferred to the mucus from his throat. He felt that the mucus was a dreadful thing and very serious. His real fears were explained to him and that the catarrh was not a bit important. He did very well after a few weeks.

One sees a great number of these cases in which "catarrh", a condition that appears to have a very bad name amongst the public, is what the patient complains of, but the real factor is some other anxiety which has to be discovered.

CASE XXXII.—Mrs. S.R. had suffered from severe nervous conditions of all sorts for years. She had had shock treatment by specialists. She had all sorts of symptoms, but never did much good under any treatment. She was the type of patient whom one dreaded to see come to the surgery. Finally, after several years, she was present at a happy party and she told me of an experience which she had had under similar conditions many years before when as a girl all was going happily with a big crowd. At a party she was near her mother and she saw her mother suddenly sit and gaze ahead. She got an awful fright and shock, but worse still a very guilty conscience. This guilty conscience is often present in patients who have nursed or attended relatives. She thought that her mother had fainted and put her head down. Her mother was dead in an hour or two and she wondered in her great distress: "Did I do the wrong thing by putting mother's head down and thereby killing mother?" She had never mentioned it previously in many interviews. I told her it was a very vital point in her case, and the fact of discovering it would help greatly in her cure. I said that there was no chance of her having killed her mother and that she had done the right thing.

She did not make a dramatic recovery, but I believe this discovery has helped considerably in ameliorating her symptoms and furthering her recovery.

CASE XXXIII.—Miss R., aged thirty-nine years, was very nervous, and had plenty of worries. She said that she could not help it; that it got her down; she had been like it all her life. She had worried since her mother's illness. She was reassured about her health; she was told that the nervous constitution did not matter, and that she would do perfectly well, which she did.

CASE XXXIV.—Mr. M., a returned soldier, had very troublesome bronchitis and asthma. The asthma kept him awake for a great part of the night. He was sleeping badly and worrying all the time; he was unsettled, and doubted if he would get better. I told him he was worrying too much about something. He had had a good deal of worry

while on service in connexion with illness at home, but it was difficult to elucidate the fact that his real worry was the fear that he had phthisis. He did well gradually, after a few weeks. He slept well. The asthma attacks gradually subsided and he has been well ever since.

Overwork.

There is no such thing as overwork or overstudy as an only cause of a nervous breakdown. Patients may have a lot of work to do, they may have a good deal of worry in carrying out that work; but overwork is not the cause of a nervous breakdown. There is usually a worry of some sort which has to be investigated, and when discovered will help greatly to secure a complete recovery. It is no good sending a patient away for a holiday before solving this known (or unknown) anxiety. Once the anxiety is settled, the patient improves rapidly on holidays. Patients will sometimes improve in any case, but very often not at all satisfactorily unless this discovery is made.

CASE XXXV.—Miss N., aged twenty-eight years, suffered from pain at the back of the right eye for seven to ten days. The pain started while she was at work. She was very nervy and irritable and felt tired and miserable. She said that she was overworked. She slept well. Her mother said that her blood was out of order. She was trying to do a big job in a big factory with very little help. She had a big responsibility. She improved somewhat with general advice, but in six weeks her condition was quite unsatisfactory. She was told that she had more worry than she admitted. It was then discovered that a young man to whom she thought of becoming engaged was suspected of having fits and there was worry about whether she should become engaged on that account. We had a talk about the matter and decided that the young man should have expert advice at once as to what was the right thing to do and that they could then make a decision. One month later the question was still unsettled and still more reasons were sought. A conference was held with the parents and the head of the factory; the result was decidedly satisfactory. Considerable appreciation of her work was expressed; a big rise in salary eventuated which she felt was her due, and she rapidly improved, gained weight and felt well.

Anæsthetics.

Anæsthetics often cause considerable fear of smothering. Try to avoid this fear which is of considerable importance.

Conclusion.

To sum up, I would say that this is a very difficult subject to present to others in an understandable manner. All the facts were formed after very mature consideration over nearly forty years. It is an extremely vast subject, and the more one becomes involved in it, the more fascinating and interesting it becomes.

It is a very real live subject and at present is not understood or appreciated at its true value. I believe that it is a subject which will lead to more relief of human misery and to greater happiness for the masses than any other subject in the whole realm of medicine, and also that it will prove to be one of our most important advances.

I feel that the reason why some of our profession have not shown more interest in it is the difficulty of acquiring sufficient knowledge to give us confidence that we hold in our hands such a power for good.

Your criticism will be of great value, even if it does not agree on all points. It leads to balanced judgement and true knowledge which is necessary if these ideas are going to hold their place and be permanent as an aid to health of these unhappy people.

There are some difficulties in treating anxieties, but the more one sees of cases, the more one is forced to the conclusion that with greater knowledge and more efficient treatment the condition is a most hopeful one in the majority of cases, even when considerable disease is concurrent with the anxiety.

I cannot do better in conclusion than remind you of the words of the late Sir Richard R. Stawell, that great and inspired physician whose personality was as outstanding as his diagnostic ability, whose prognosis, spoken with confidence, "You will get well. You will get perfectly well", was sufficient to effect a cure; and whose life and example are worthy to be followed.

THE APPLICATION OF THE DERMATOME IN PLASTIC SURGERY.

By BASIL W. B. RILEY, M.B., Ch.M., F.R.C.S. (Edinburgh),

Consulting Plastic Surgeon, Royal Australian Air Force; Honorary Surgeon in Charge of Plastic and Facio-Maxillary Unit, Royal North Shore Hospital, Sydney; Consulting Plastic Surgeon, Saint George District Hospital, Kogarah.

THE ideal graft is such that it will fulfil the following desiderata: (i) it will be thin enough to transplant successfully and yet thick enough to afford adequate protection with the minimum contraction; (ii) it will leave the donor site capable of spontaneous regeneration; (iii) it will match the surrounding skin in colour and texture as far as possible.

Until about 1925, the most commonly used types of skin grafts were the thin razor-cut graft (better known as the Thiersch graft), the full thickness or Wolfe graft, and

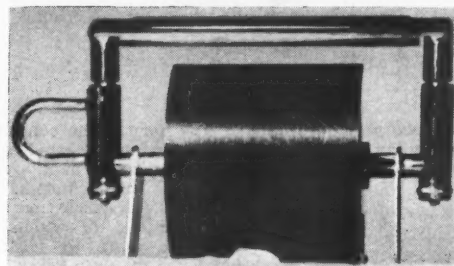


FIGURE I.

the so-called "pinch graft" introduced by Reverdin. About this time, Blair and Brown,⁽¹⁾⁽²⁾ in an effort to combine the advantageous qualities of all these three, introduced a graft which they designated "the split skin graft", and claimed that they transected the uppermost one-third to two-thirds of the skin. This was a progressive step and a valuable contribution to plastic surgery; but the satisfactory performance thereof presents some difficulties and limitations, inasmuch as even in the most dexterous hands it is not possible to cut with a knife such a graft of large

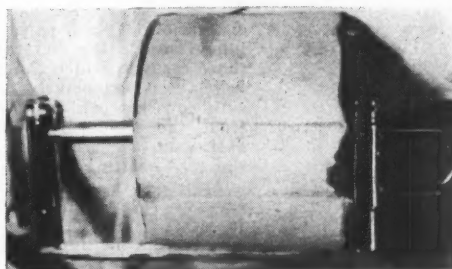


FIGURE II.

dimensions without considerable variations in thickness. Furthermore, one is still restricted to those parts of the body upon which a grafting knife can be manipulated with absolute safety. The limitations of the free grafting knife are well illustrated in extensive burns, which, as they often involve the greater part of both legs and forearms, render quite inadequate the amount of donor area available for free grafting.

It occurred to Earl Padgett⁽³⁾ that, if one could cut uniform grafts below the limit of the Blair and Brown

"split graft" and yet above the lowermost limits of the corium, the desirable would be attained, and so, after many years of experimentation, the dermatome now in universal use was finally designed in 1938.

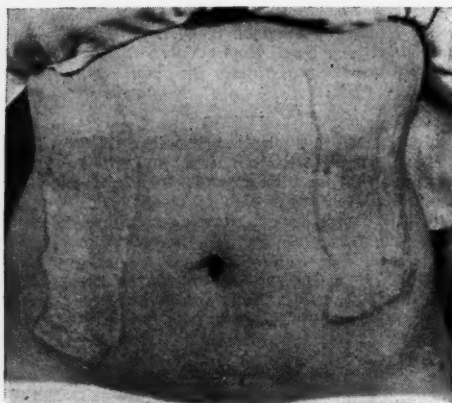


FIGURE III.

As will be seen in Figure I, the dermatome consists of a semicircular metal drum with a surface measuring four inches by eight inches attached to an axial handle round

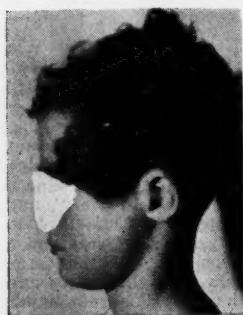


FIGURE IV.



FIGURE V.

which the drum rotates. The knife blade is carried on a bar, at either end of which is a telescopic shaft, by means of which the distance between the blade edge and the drum surface can be regulated to any fixed calibration. By means of a handle the knife blade is moved from side to side in a sawing action parallel to the surface of the drum as this is rotated through 90°. This mechanical device enables one to cut grafts, measuring four inches by eight inches in area, of uniform and any predetermined thickness, such as will leave a donor site capable of spontaneous regeneration. Also of paramount importance is the fact that in those cases in which the limbs have been extensively burnt, skin covering can be obtained from the abdomen, chest or back—an impossibility with the free grafting knife. This is also of particular use in the case of very young children, in which one often cannot obtain from the limbs sufficient skin to cover a large defect. A piece of skin as much as 780 square centimetres in area has been cut with the dermatome at one sitting.

Webster⁽⁴⁾ describes and illustrates a smaller pattern of dermatome with a surface area of 17.53 square inches, which he states is particularly useful for cutting smaller grafts and

in which one feels the necessity of avoiding too much pressure on the relaxed abdominal wall.

Technique.

It cannot be too strongly emphasized that the essentials for a successful "take" of a dermatome graft are the same as for all other skin grafts, namely: (i) a clean

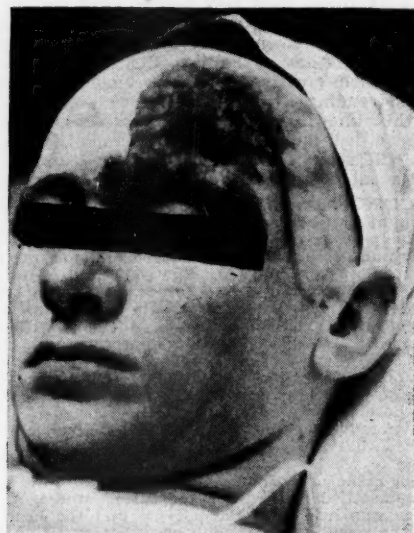


FIGURE VI.

surface, (ii) complete haemostasis, (iii) meticulous care in fixation, (iv) proper tension, (v) adequate pressure. Haematoma and excessive tension still remain the arch enemies of successful skin grafting.

The patient is prepared in the usual way for a major operation under general anaesthesia. The skin is shaved if necessary the day before, and on the morning of the operation the patient is given a warm soap and water bath and clad in clean attire. The skin is then thoroughly cleansed with ether soap, sterile water and "Zephiran" solution (1:100) and finished with methylated spirit, and the whole area is covered with a sterile dressing towel and bandages.



FIGURE VII.

On the patient's arrival in the operating theatre, the skin is cleansed with ether and dried thoroughly with a dry sponge. Ether is also poured over the surface of the dermatome drum. If the area to be grafted is on a limb, a tourniquet is used until the excision of the scar is completed. The entire cicatrix must be excised with extreme care and thoroughness. Haemorrhaging vessels are clamped with mosquito forceps, and when haemorrhage is not thereby controlled, they are tied off with "00000"

catgut or fine silk, it being borne in mind that the fewer ligatures under the graft, the better. These should be cut right down on the knot. Oozing can be best controlled by the patient application of pressure with sponges wrung out of hot water, or sometimes better results are obtained with iced water.



FIGURE VIII.

A pattern of the defect is then made. The following technique advocated by Kanthak⁽⁵⁾ is recommended. A large sheet of hard-faced sterile filter paper is pressed on the denuded area and a "blood print" is recorded and cut out with scissors. The surface of this pattern corresponding to the skin and sub-

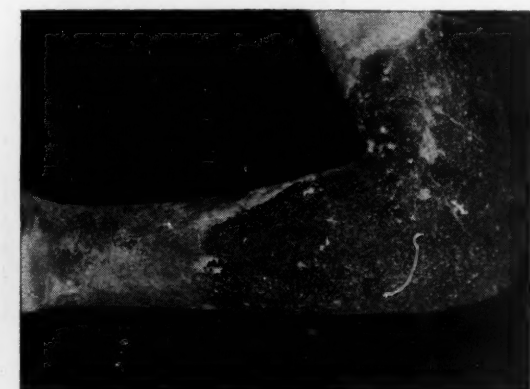


FIGURE IX.

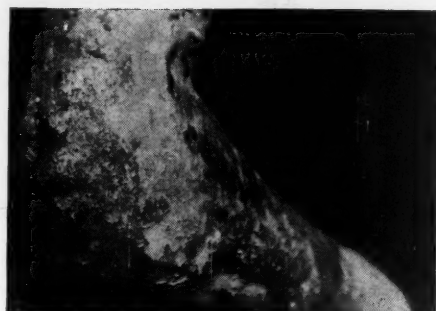


FIGURE IXA.

cutaneous tissue respectively is then clearly marked with Bonney's blue. Sponges are placed over the denuded surface and firm pressure is exerted by means

the towel drappings will interfere with the manipulation of the instrument. Meanwhile the rubber solution (a special dermatome solution is prepared by Dunlop Rubber Company) has been vigorously shaken for five minutes and is now applied evenly with a soft brush to the skin



FIGURE X.



FIGURE XA.

surface and then to the drum—the exact moment of application being noted. Tests are made with the finger tip at frequent intervals to determine the moment of optimum adhesion, which varies (with the temperature of the operating theatre, the dryness of the patient's skin and the quality of the rubber solution) from thirty seconds to five minutes. The drum is then pressed firmly against the skin, particular care being taken to ensure accurate contact along the margin of the drum. After about one minute the drum is raised, the adherent skin being lifted with it, and a quick movement is made with the blade handle to initiate the skin incision. If the adhesion of the skin to the drum is satisfactory, the former will be incised to the width of the latter. The drum is then slowly rotated by dorsiflexion of the left hand whilst the



FIGURE XI.



FIGURE XIa.

sawing movement of the knife blade is simultaneously carried out by the right hand. When the limit of the adherent skin is reached, it should be cut with the scissors to avoid the blade's penetrating the subcutaneous tissues. Figure II shows the dermatome with the full graft attached.

The filter paper pattern is then placed on the graft while the latter is still adherent to the drum, care being taken that the skin surface of the pattern is in contact with the raw surface of the graft. With a scalpel, the graft is cut to the pattern and the excess skin is discarded. The graft is peeled off the drum and fixed with drawing pins to a board for removal of the adherent rubber solution



FIGURE XII.



FIGURE XIII.

with McIndoe's dissecting forceps; this prevents the graft from becoming crumpled up and difficult to manipulate. The donor site is now covered with *tulle gras* on which is spread 10% benzocaine ointment; outside this the usual pressure dressing and firm bandages are applied. The area to be grafted is then uncovered and complete

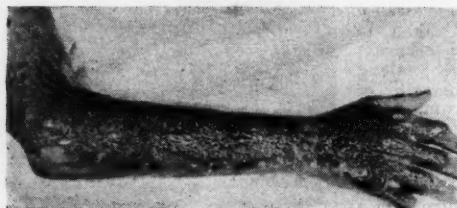


FIGURE XIV.



FIGURE XV.

hemostasis is confirmed, whereupon the graft is inserted and fixed with "0000" silk (Pearsall) interrupted sutures at several points, and the remaining margins are approximated with extreme accuracy by a continuous suture of the same material. A gauze roller is then run over the graft to eliminate any blood clot and air bubbles. The graft is then covered with some form of *tulle gras*, over

which is placed a thick layer of specially prepared acriflavine wool, and the whole is then firmly bandaged with gauze wrung out of saline solution. Pads and a crêpe bandage firmly applied complete the pressure dressing. The dressing is left undisturbed for seven days. Alternate



FIGURE XVI.

sutures are removed at this inspection, and the remainder on the following day. Any small areas of necrosis (generally marginal) are painted with a 2% spirituous solution of mercurochrome daily until the slough separates.

Healing should be complete by the fourteenth day. The donor site is left undisturbed for seven days; then, if difficulty in removing the dressing is encountered, superficial hemorrhage should be avoided by soaking the dressing with saline solution or floating it off in a bath. This dressing should be renewed every day for seven days; by this time the surface is usually completely epithelialized (Figure III) and no further covering is necessary.



FIGURE XVII.

Reports of Cases.

CASE I.—P.R., aged eight years, had a large pigmented mole involving one-half of the scalp, extending down over

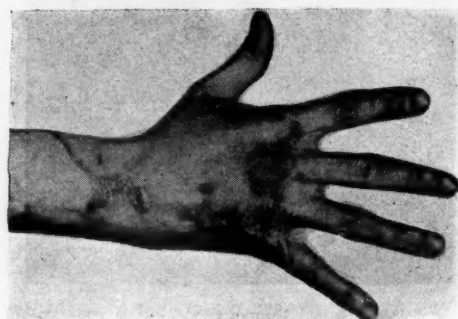


FIGURE XVIII.

the left temporal region, the lateral half of the left eyebrow and upper eyelid and the left cheek to the level of the external auditory meatus. The whole area was rugose,

acri-
with
crépe
essing.
ernate

deeply pigmented and covered with coarse black stubbly hair (Figure IV). With the patient under "Pentothal" anesthesia, the affected area outside the normal hair line was excised and a dermatome graft measuring five inches by four inches and 0.016 inch in thickness was cut from the left flank and inserted into the defect. Microscopic examination of the section revealed a pigmented nevus with heavily pigmented cells in the dermis and deeper epidermis. The activity of the growth was considered to be of fairly high degree.



FIGURE XVIII.

affected area was excised and replaced by a dermatome graft measuring five inches by four inches and 0.018 inch in thickness (Figure VII). Microscopic examination revealed the nevus to be acanthotic, with no malignant features. Figure VIII shows the patient's appearance four weeks after operation.

The missing eyebrow will be replaced by a full thickness hair-bearing graft from behind the ear.



FIGURE XIX.

CASE III.—F.H.H., aged twenty-five years, a male patient, was involved in an aircraft accident in October, 1944. He sustained second and third degree burns of the body and of the right arm and forearm (Figures IX and IXA); in spite of early Thiersch grafting, the result was dense cheloid scarring (Figures X and Xa). On April 23, 1945, the affected area, measuring approximately fourteen inches by

three inches, was excised under general anesthesia, and dermatome grafts 0.018 inch in thickness were inserted (Figures XI and XIa). Figures XII and XIIa illustrate the patient's appearance seven months after operation.

CASE IV.—R.B., an airman, was involved in an aircraft accident on September 16, 1944. He sustained second and third degree burns of the face, arms, forearms and nose. The right arm was involved in this injury from the middle of the forearm to the finger tips, the extensor tendons being exposed in several places (Figure XIII). Infection by *Bacillus pyocyaneus* delayed grafting; but finally dermatome



FIGURE XX.

grafts, 0.018 inch in thickness, taken from the abdominal wall, were employed. Figure XIV shows the appearance thirteen months after operation.

CASE V.—T.D., aged twenty years, was involved in an aircraft accident in June, 1944, sustaining amongst other injuries second and third degree burns of the right hand. When he was admitted to the base hospital, healing had occurred with a thin papyraceous unstable covering (Figure XV). An area of skin over the dorsum of the hand, from two inches proximal to the styloid process to the finger webs, was excised (Figure XVI) and replaced by a dermatome graft, 0.018 inch in thickness, from the abdominal wall. Figure XVII shows the appearance three months after operation.

CASE VI.—H.G., a female patient, aged twenty-one years, had an extensive port-wine nevus involving the greater portion of the right side of the face and nose (Figure XVIII). The whole area with the exception of the eyelids and forehead was excised, and a dermatome graft 0.016 inch in thickness was inserted (Figure XIX). Pressure was maintained over this graft by means of an acrylic mask, which was held in position by tying the sutures through marginal holes in the mask (Figure XX). Separate dermatome grafts were used for the eyelids, 0.014 inch in thickness. The appearance eighteen months after operation is shown in Figure XXI.



FIGURE XXI.

CASE VII.—L.C., aged twenty years, was involved in an aircraft accident, sustaining extensive second and third

under
crosis
tuous
rates.

ented
over

orow
the
gose.

degree burns of the back and left arm (Figure XXII). The dorsal aspect of the left elbow joint healed with a grossly cheiloid and unstable scar (Figure XXIII). This was excised and replaced by a dermatome graft, 0.016 inch in thickness, taken from the abdomen. The results two weeks and three months later are shown in Figures XXIV and XXV respectively.



FIGURE XXII.

Acknowledgements.

I wish to thank the Director-General of Medical Services, Royal Australian Air Force, for permission to publish case histories and photographs of Royal Australian Air Force personnel, and also Sergeant Brain and Leading Aircraftman Edwards, of the Photographic Section, 113th Australian General Hospital, for their assistance in the preparation of the photographs.



FIGURE XXIII.

References.

- ⁽¹⁾ V. P. Blair: "The Full Thickness Skin Graft", *Annals of Surgery*, Volume LXXX, 1924, page 298.
- ⁽²⁾ V. P. Blair and J. B. Brown: "The Use and Uses of Large Split Grafts of Intermediate Thickness", *Surgery, Gynecology and Obstetrics*, Volume XLIX, 1929, page 82.
- ⁽³⁾ E. C. Padgett: "Calibrated Intermediate Skin Grafts", *Surgery, Gynecology and Obstetrics*, Volume LXIX, 1939, page 779.

⁽⁴⁾ G. V. Webster: "A Dermatome for Cutting Small Skin Grafts", *United States Naval Medical Bulletin*, Volume XLI, July, 1943, page 1145.



FIGURE XXIV.

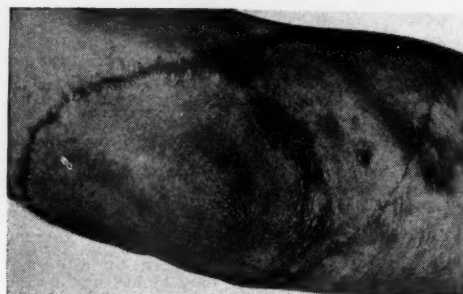


FIGURE XXV.

⁽⁵⁾ F. F. Kanthak: "The Dermatome Pattern Graft and its Use in Reconstruction of the Hand", *Surgery, Gynecology and Obstetrics*, Volume LXXVII, 1943, page 610.

Reports of Cases.

AN INTERESTING CAUSE OF NOISES IN THE EAR.

By D. G. PERRETT,
Newcastle, New South Wales.

On September 27, 1946, Mr. L.J.W., aged fifty-three years, came into my surgery complaining of giddiness and of noises in the left ear, following an injury sustained in May of the same year, when he was thrown off a horse which he was training. The horse had collided with a sapling and had been killed outright. Mr. L.J.W. was thrown thirty feet away, landing on the side of his face. He sustained fractures of ribs and concussion, the left ear being torn posteriorly. He was unconscious for some twenty-four hours, but no fracture of the skull was detected; however, his left ear was almost torn off.

On examining the patient's left ear (which, incidentally, gave normal responses to hearing tests), my fingers resting on his face just anterior to the meatal canal, I felt an aneurysmal thrill over the superficial temporal artery. On compression of the superficial temporal artery the patient immediately stated that the noises had stopped. On listening over the same area with a stethoscope I heard a loud aneurysmal bruit.

On January 28, 1947, I made a subzygomatic incision and found embedded in a mass of scar tissue an arteriovenous aneurysm of the superficial temporal artery and vein, just at the superior border of the parotid gland, which was ligated above and below, with some difficulty,

owing to the proximity of the gland. I may mention that, as the patient had refused to have his external carotid artery tied off, I was forced to make the subzygomatic incision.

Since that time the patient has been completely free of any noises in the ear or in the head.

On looking through the available literature I can find only one similar case of noises in the ear or head produced by an aneurysm, and in that case the cause was a traumatic aneurysm of the external carotid in the neck.

Reviews.

PSYCHOLOGICAL TESTING.

PART II of the "Manual of Diagnostic Psychological Testing", by Rapaport and Schafer, is devoted to three psychological tests, the word association test, the Rorschach test and the thematic apperception test.¹ These tests have been grouped together because of their value in revealing dynamic factors motivating personality.

In the word association test the subject is asked to reply to a number of specially chosen words with the first word that comes to mind. In the Rorschach test the subject is asked to describe what he sees in a series of ink blots. In the thematic apperception test the subject is asked to make up a story round a series of pictures. This type of test makes the subject of the test unaware of the significance of his answers and so should shed light on factors governing his behaviour.

This book sets out clearly the way the test is administered, how it is interpreted and the theoretical implications of the different types of reply.

The results of the tests in a number of different psychological disorders are given. Although the analysis of these results tend to cover the types of disorder as a whole, yet it is made clear that variations in these general conclusions must be expected in individual cases.

The authors rightly emphasize the limitations of psychological tests—that more than one test is desirable, that tests should give information on personality structure rather than provide a diagnostic label, that the tests vary in value with the type of disorder, and that the tests are of less value in states near to normality.

In this small volume the authors have described satisfactorily the information that these tests give, but, like most books on these tests, there is no clear indication of their practical value in psychiatric practice. For instance, one would like to know whether the information gained from a battery of tests could not be gained in a shorter period of time in the normal procedure of history taking.

YEAR BOOK OF RADIOLOGY.

"THE 1946 YEAR BOOK OF RADIOLOGY" has been received for review.² This well-known annual consists of a digest of various articles published in the radiological journals of the world. It should be of great help to the practising radiologist who finds it impossible to subscribe to the multitudinous amount of literature on this subject, and it helps him to keep abreast of the various advances in radiology. There is much new work incorporated in the book, and in a short review it is impossible to comment on all the subject matter recorded.

The work on pneumography of the knee joint is extremely interesting. Oxygen is introduced into the joint under local anaesthesia and in many cases the damage to and displacement of cartilages can be demonstrated. It is noted that the increased pressure causes typical localized pain in ligamentous injury, but not in meniscus displacements. Technique for displaying the patello-femoral joint surface

¹"Manual of Diagnostic Psychological Testing, II. Diagnostic Testing of Personality and Ideational Content", by David Rapaport, Ph.D., and Roy Schafer, B.S., with the collaboration of Merton Gill, M.D.; 1946. New York: Josiah Macy, junior, Foundation Publications. 9" x 6", pp. 106. Price: \$75.

²"The 1946 Year Book of Radiology, July, 1945, to June, 1946"; Diagnosis, edited by Charles A. Waters, M.D. Associate Editor, Whitmer B. Firor, M.D.; Therapeutics, edited by Ira I. Kaplan, M.D., Associate Editor, Sidney Rubinfeld, M.D.; 1946. Chicago: The Year Book Publishers, Inc. 9½" x 6½", pp. 464, with many illustrations. Price: 28s.

is described by Gunnar Wiberg, films being taken with the limb in 90° flexion. Various authors have described "fatigue" fractures. In spondylolisthesis Garland and Thomas stress the point that in this condition the vertebral body must be displaced as a whole in relation to its neighbour and not merely when there is apparent displacement of the posterior margin only. In discussing hydatid disease of bone, Howarth states that only 1% of hydatid cysts affect bones and that there is no definite diagnostic bone appearance. Osteoid osteoma (Jaffe) is characterized by localized tenderness over a single area of bone translucency and differentiation from osteomyelitis is difficult. Microscopically it consists of trabeculae of newly formed osseous tissues, with a substratum of highly vascularized osteogenic connective tissue.

In lacerated spleen, Levine, Cohen and Goldsmith draw attention to the constant presence of left shoulder pain which is increased by deep inspiration.

Bronchography is described in detail (Zavod) and the author uses an intratracheal catheter under local anaesthesia in the injection. Excellent diagrams illustrate an article by Robbins and Hale on lobar and segmental collapse of the lungs. In pneumonokoniosis (various authors) the increase in reticulation is differentiated from general increase in lung markings in that it shows an exaggerated pattern of the venous and arterial vessels giving a lace-like appearance. Druckmann records the rate of growth of pulmonary hydatids. There is no fixed rule for such growth, some attaining large size in a few months, while others take years to reach the same size. The author reports an unusual number of ruptured cysts in the lungs with the appearance of new cysts. This last-mentioned observation is not very convincing. Excretion urography in children has given good results (Friese Christensen). Some interesting oesophageal conditions are illustrated.

The section on radiotherapy covers all modern advances. The possible development of atomic energy in this field is discussed by various writers, and all stress that much experimental work is needed. At present there is little difference in results whether 200 or 20,000 kilovoltage is used. It is generally accepted that 1r of betatron rays is equal to 0.65r of 200 kilovolt rays. Results from radioactive elements produced by cyclotron bombardment have not, so far, been encouraging in the treatment of cancer, but radioactive iodine has been used with some success in thyroid disease. Radiophosphorus has given good results in *polycythemia vera*, but not in leucemia. X rays still give better results than radioactive elements in Hodgkin's disease, lymphosarcoma, reticulum cell sarcoma and multiple myeloma. The mustards are giving promising results in the treatment of neoplasms of lymphoid tissue. Penicillin has proved of little value in destroying neoplastic cells. Good results are still being obtained in the treatment of Marie-Strümpell's spondylitis; the work of Parr and Shipton on Marie-Strümpell's disease is reviewed at length. The whole field of radiation therapy is covered by the various reviews on individual subjects.

Altogether this book is excellent and should find a place in the library of every radiologist.

GYNAECOLOGY.

THE fifth edition of "A Textbook of Gynecology", by A. H. Curtis, is to hand.³ It is interesting to compare this work with his first edition of 1930. The same style is present in both editions, and it is evident that the author is fully conversant with the modern ideas in endocrinology, pathology and therapy. He has not changed his operative technique to any appreciable extent.

One of the main attractions of this book is that it is "easy to read". Many textbooks are written in a dull unimaginative style that compels the student to reread sentence after sentence before the full meaning is apparent. At the same time this appears to us to be a book for graduates; the material is not systematized or accentuated enough for the student taking his first steps in the realm of gynaecology.

The chapter on the "Anatomy of the Female Pelvis and Perineum" is one of the best to appear in any textbook. The illustrations are profuse and original, and the description is clear. Another pleasing factor in this and other chapters is the relative absence of irritating mistakes in the legends to the illustrations, a common fault in certain textbooks.

³"A Textbook of Gynecology", by Arthur Hale Curtis, M.D.; Fifth Edition; 1946. Philadelphia and London: W. B. Saunders Company. Melbourne: Ramsay (Surgical) Proprietary Limited. 9½" x 6½", pp. 772, with many illustrations. Price: 60s.

In dealing with endocrinology, the author shows commendable conservatism; a few measures of real therapeutic value are advocated, but the extravagant claims of some authors and of many commercial houses are briefly discussed and dismissed.

The author states that he is "impressed" with the frequency of cervical obstruction and its pathological consequences, and this is apparent throughout the book. We consider that his statement should read "obsessed" for "impressed". It is possible that the importance of cervical obstruction has been neglected by many authors, but we do not think it is as frequent as Dr. Curtis implies.

The difficult question of subtotal *versus* total hysterectomy is discussed, and the greater mortality of the total compared with the subtotal operation is emphasized. We gather that the subtotal operation, with splitting and inspection of the cervical stump from above, is advocated in doubtful cases. With this procedure we do not agree. Early malignant disease is often difficult to determine in a split cervical stump, and with the Worrall type of total hysterectomy the mortality is very little more than in the subtotal procedure. Supravaginal hysterectomy is permissible only for a shocked patient, or during a long and arduous operation if the vaginal inspection of the cervix has revealed no suspicious signs. An inexperienced operator, if forced to perform hysterectomy, may find it expedient to perform a subtotal hysterectomy.

Although this does not profess to be a textbook of operative gynaecology, the principal operations are briefly discussed and more fully illustrated than in most other textbooks of this type.

The dosage of radium in treatment of cervical cancer seems somewhat inadequate, and the methods of radium application do not appeal to us. However, this is a matter of opinion, and the author's methods are doubtless favoured by some schools. A plea is made for the regular examination of all women of cancer age.

Throughout the whole work the value of the recto-vaginal examination is stressed, and rightly so. In the discussion of uterine displacements and prolapse, the original Gilliam's operation is described as if it was a procedure which is sometimes accepted, although the author does not appear to favour it. In our opinion, this operation, if mentioned at all, should be condemned as a dangerous and outmoded act of barbarity. The various so-called "modifications of Gilliam's operation", such as the Crossen, Simpson, Bonney, McEwan, are good operations and should be utterly divorced from the name of Gilliam.

A modification of the Manchester operation in complete prolapse finds favour, and it is pleasing to see that in America this operation is commencing to rival in popularity the Watkins interposition operation.

The author takes a very optimistic view of his operation for stress incontinence. Is it possible that some of Dr. Curtis's failures did not return to him?

The subject of sterility is treated in a conservative and well-balanced manner.

As mentioned before, this book is "easy to read", and we enjoyed it.

FRACTURES, DISLOCATIONS AND SPRAINS.

"THE MANAGEMENT OF FRACTURES, DISLOCATIONS AND SPRAINS", by Key and Connell, is a large book of over 1,300 pages, containing over 1,300 illustrations. We have had the pleasure of making some study of the fourth edition.¹ Four editions have been published within twelve years. This is by itself a testimony to the value of a book, and we fully agree with the general verdict. This book is not pontifical and supremacist. Its authors are not inclined to ignore difficulties, and are ready to admit the inevitability of second or third grade results in some of the problems that the surgeon is called on to face. The authors and their collaborators bring with them large practical experience and careful judgement. It is correspondingly useful, and sometimes very helpful. It would be foolish to expect a book to be in all respects a reflection of one's own views or practice. Opinions must sometimes differ. Sometimes opinions should be reconsidered. Sometimes two are right at the same time. Experienced men obtain good results by quite various means, perhaps not always equally comfortable to the patient, and we see that in this book the authors themselves have at times each his own favourite methods. This, in our opinion,

¹"The Management of Fractures, Dislocations and Sprains", by John Albert Key, B.S., M.D., and H. Earle Connell, M.D., F.A.C.S.; Fourth Edition; 1946. St. Louis: The C. V. Mosby Company; Melbourne: Ramsay (Surgical) Proprietary Limited. 16" x 6", pp. 1322, with many illustrations. Price: 94s.

adds to the general value of the book, and never confuses the reader.

We do not propose to make a detailed notice of the different parts. Perhaps the practitioner making a casual study will find the chapter on fractures at the ankle a good sample of the authors' pattern of work, and the accompanying illustrations show very well some of the great difficulties that may have to be met.

It is to be noted that the authors have not followed the modern anatomical nomenclature. For example, they speak rather of "internal" and "external" where now we usually write "medial" or "lateral", respectively. We would prefer the modern terms. But that is a small matter.

"Key and Connell" will be useful in any surgeon's or general practitioner's library, and in the reference library of every hospital.

PHYSIOLOGY.

"THE PHYSIOLOGY OF TISSUES AND ORGANS" by Professor D. H. K. Lee, of the University of Queensland, is a short book of 149 pages of text.¹ It obviously results from the author's dissatisfaction with the card index style of the smaller existing texts and the near encyclopaedic nature of the "standard" texts in physiology as primers for students of physiology. He has set out to give the student a short synoptic account of the subject. He emphasizes simple functional notions and moulds any detail upon these without obscuring their importance. As a result, the subject is presented in a deductive fashion and has both the merits and shortcomings of this approach.

There can be no doubt that the reader of this book will start to think about physiology. He will undoubtedly then realize both the intentional and the unintentional shortcomings of the book. We agree heartily with the need for a book with the objectives of the present one, but too great exclusion of material and simplicity can be just as confusing as too great profusion of material and complexity. The biological implications of the Gibbs-Donnan law hardly begin to emerge from one short paragraph of text. The application of the term "accommodation" to the two different phenomena in sensory end organs and nerve fibres does not justify the simplification of treating them as a single phenomenon. *Petitio principii* sometimes raises its head, for example, "maximum possible under the conditions, since depolarisation is complete. This is known as the all or none law". Numerical data are sometimes given without any indication of normal limits or even that there are normal variations, for example, plasma albumin 4.1% and organic solutes of plasma 1.9%. Sometimes the apparent simplicity of the problem leads to error, for example, page 116, "the main lens is formed by a special type of connective tissue", does not refer to the cornea which is developed from connective tissue and is the main refractive tissue of the eye, but refers to the lens which is developed from epithelium and has less refractive effect than the cornea.

Such criticisms tend to obscure the fact, however, that the book largely succeeds in its objective. Nobody can read it without getting a viewpoint on the subject, and that is the most important thing a student can get and one at which all too few books aim.

MATERIA MEDICA FOR NURSES.

THE second edition of "Materia Medica for Nurses", by Sister Lois Oakes and pharmacist Arnold Bennett is a practical and interesting survey of the subject.²

It fully covers the broad scope of the rambling science of *materia medica*, from a brief treatise on the British Pharmacopoeia and the British Pharmaceutical Codex to pharmaceutical arithmetic, with suitable references to allied sciences (pharmacology *et cetera*) in due proportion for a nurse's requirements.

The inclusion of tables on posology and weights and measures, lists of drug synonyms and abbreviations used in prescriptions and the adequate synopses of the *materia medica* of a wide range of drugs (including penicillin and sulphonamides) particularly recommend this book to a place in the nurse's library.

¹"The Physiology of Tissues and Organs: An Introduction to the Study of Systematic Physiology" by Douglas H. K. Lee, M.D., M.Sc., D.T.M., F.R.A.C.P.; 1946. Brisbane: The University of Queensland. 8½" x 5½", pp. 168, with illustrations.

²"Materia Medica for Nurses", by Lois Oakes, S.N.R., D.N., and Arnold Bennett, M.P.S.; Second Edition; 1947. Edinburgh: E. and S. Livingstone, Limited. 7½" x 5", pp. 363. Price: 7s. 6d.

The Medical Journal of Australia

SATURDAY, APRIL 12, 1947.

All articles submitted for publication in this journal should be typed with double or treble spacing. Carbon copies should not be sent. Authors are requested to avoid the use of abbreviations and not to underline either words or phrases.

References to articles and books should be carefully checked. In a reference the following information should be given without abbreviation: initials of author, surname of author, full title of article, name of journal, volume, full date (month, day and year), number of the first page of the article. If a reference is made to an abstract of a paper, the name of the original journal, together with that of the journal in which the abstract has appeared, should be given with full date in each instance.

Authors who are not accustomed to preparing drawings or photographic prints for reproduction are invited to seek the advice of the Editor.

THE STUDY OF BIOCHEMISTRY AND NUTRITION.

WHAT a happy matter it would be for those who arrange courses of study if medical science was unprogressive! Then botany, zoology, chemistry, physics, physiology and pathology would be taught by medical practitioners and correlation of the fundamentals with the clinical subjects could be made complete. As in the Middle Ages with scholastic lore, it would be possible for a gifted man to take all medical science as his province. But alas for the framers of curricula, both clinical medicine and the sciences on which it is based are in a constant state of flux, a flux which is always progressive in its direction. Anything like a stereotyped curriculum of medical study is therefore impossible. Our present age has witnessed the translation of certain subjects, once regarded as medical, into non-medical sciences often pursued by experts with no medical training or sympathy. Biochemistry is an outstanding example of this tendency. The time was when physiological chemistry was confined to the proteins, carbohydrates and fats of the tissues and the main constituents of the body fluids, especially blood, urine, gastric content and bile. The chemistry, that is, the necessary chemistry, of their constituents was regarded as simple and their didactic exposition in textbooks for medical students was correspondingly succinct. But soon organic chemistry began to exert a disturbing influence on this complacency; sugars, to which formerly simple aldehydic or ketonic structures had been assigned, in the researches of Haworth, Irvine and others, assumed complexities of molecular structure hitherto unsuspected. Still their formulæ were not beyond the grasp of medical students who had been emancipated from the tyranny of physical chemistry which had dominated too many schools of chemical teaching in Australia. But a new phase came into existence when the chemical composition of vitamins, sterols and certain hormones, such as the sex hormones, was revealed by brilliant researches conducted by men who had undergone years of special training and who possibly

possessed considerable natural aptitude in a most difficult field of organic chemical investigation. It is very much open to doubt whether the medical student should be expected to comprehend the significance of constitutional formulæ containing two, three, four or five heterocyclic rings with intricate side chains attached. Manufacturers and distributors of vitamins and hormones like to give the appropriate formulæ in their advertisements, relying on the ordinary medical practitioner reacting to the pleasing flattery that he understands the meaning of these cryptic interlocked tetragons, pentagons and hexagons. This capture of many branches of biochemical investigation by the organic chemist has had as a consequence that today the leaders in biochemistry who have had a medical training are diminishing in number; the non-medical are to be found in private commercial laboratories associated with food or drug production or in research institutes with no clinical associations. Sir Frederick Gowland Hopkins may be said to be the last distinguished investigator in biochemistry who approached this science from the medical angle; some of his pupils have endeavoured to maintain this tradition, but some have not.

The ever-growing complexity of the subject and the necessity of a laborious training in laboratories of pure chemistry before modern biochemical research can be undertaken have led to the drift from medicine. This secession must be faced, but there remains one branch of biochemistry which must be retained by medicine and which should be taught by men who have not only been through the discipline of medical study, but who have acquitted themselves well in medical practice, and that is clinical biochemistry. It is perfectly true that the physician tends more and more to give up his own simple, but within certain limits, efficient private laboratory and depend upon the findings of a biochemist who specializes in this subject and does nothing else, but there is always the danger of undue emphasis being placed on a quantitative analysis divorced from clinical findings. When Professor Benedict invented his delightfully simple apparatus for determining basal metabolism, an instrument which can be entrusted to a girl of fifteen, he was horrified to find that diagnoses with recommendations for thyroidectomy were being based solely on the figures given by this instrument, and so he uttered a very timely warning to the profession in general. Similarly with an analysis of blood, or a hydrochloric acid estimation in a gastric content, each finding is simply one piece of evidence to be brought into conjunction with other and often more important findings, even though the biochemical data may be more illuminating than the bacteriological. Whether or not the teacher of clinical biochemistry is capable of devising new methods or of improving existing technique is beside the question; the great matter is that he should have medical training and considerable experience as a physician and so be capable of assessing the true value of the qualitative and quantitative estimations revealed by the methods he expounds.

Another important subject which in recent years has become partly divorced from medicine is nutrition. Time was when all nutritional authorities were physicians, and it must be candidly confessed that their magistral pronouncements were occasionally accepted by the lay public with a reverence they did not warrant. When, for example,

Dr. Benjamin Ward Richardson denounced stone fruit—just why has never been divulged—the bottom fell out of the plum market in England at least for one season. The investigation of calorie content and calorie requirements enlisted the services of some investigators who were outside the medical ranks, yet the main mass of research was carried out by medical physiologists. But when vitamin lore arose closely interwoven with advanced organic chemistry, when certain investigations could be undertaken only in costly institutes equipped for animal experimentation on a statistical basis, when the actions of vitamins and trace elements were observed on extensive farms and runs and when food analysis demanded a highly specialized technique, then medical direction began to ebb. One finds today in the ranks of distinguished nutritional authorities many specialists devoid of medical training, men who control or are attached to factories turning out certain foodstuffs or who have dedicated themselves to a rather narrow region in the chemistry of carbon compounds. It must also be admitted that the sphere of nutrition has grown so rapidly that the medical man can hardly be expected to take it in his stride. Still, as with biochemistry, there is in nutrition one domain which the physician must insist on calling his own, and that is the regulation of diet in disease. He may and often does call in the aid of the trained dietitian, but this officer must, in the hospital, take direction from the skilled physician. Let the non-medical nutritional expert continue in his good work of unravelling the molecular configuration of vitamins and vitamins, estimating and recommending the calorie consumption of armies, navies, communities, cities and nations with due regard to economic and political considerations; but the feeding of the sick must remain under medical control, as it is a part and part only of a system of treatment which is assuredly a medical prerogative.

Current Comment.

SEQUELS OF INFECTIVE HEPATITIS.

INFECTIVE HEPATITIS is a disease that has been considered somewhat optimistically with regard to the occurrence of sequels. The laboratory tests of the efficiency of the liver do not of necessity give a full or quite accurate picture of the toll which a disease like this may take, for the working margin of the organ is considerable. Recent work, including the study of biopsy material, is extending knowledge, and perhaps such questions may before long be answered more satisfactorily. Gerald Klatskin and Emanuel M. Rappaport have published an article dealing with this aspect of prognosis.¹ They point out that relatively little has been written on the subject, though, of course, physicians dealing with individual patients are much concerned with prolonged convalescence, relapses and the occurrence of sequels or, as these authors more correctly call them, residuals. Many authors have reported impairment of liver function in a high proportion of persons who have apparently recovered from acute hepatitis, but their methods have not as a rule covered a large field. In the present inquiry about 3,000 persons were surveyed concerning a past attack of jaundice. The history was carefully investigated, the circumstances surrounding the illness were ascertained, particularly concerning its intensity, the depth of the jaundice, with if possible the figures for estimations of the icterus index, and the significance of any possible residual symptoms was

examined. Jaundice following yellow fever inoculation or blood or serum transfusion was noted separately, but instances of these conditions were not excluded from the series. The abdomen was carefully examined, and the size of the liver and spleen was noted, together with the condition of the superficial vascular connexions of the region. The sclerae were examined for icterus, and the skin for the presence of *naevi* and palmar erythema. Tenderness of the liver, if elicited by either compression or percussion, was specially noted. The biochemical tests employed included estimation of the serum bilirubin, the thymol turbidity test, the cephalin-cholesterol flocculation test, the bromsulphthalein test and the quantitative urobilinogen determination in the urine.

From the total patients surveyed in the first place by questionnaire, 217 were selected as undoubtedly having a clear history of a previous attack of acute hepatitis. It was this series which formed the basis of the present research. Half the patients still had symptoms referable to the liver, though they were supposed to have completely recovered from their illness. Enlargement of the liver was found in 27%, 22% had subjective symptoms, and 19% had evidence of impaired hepatic function. Of the symptoms the most striking was intolerance to fats contained in fried foods and fatty meats; milk and eggs could be taken without discomfort. Pain occurred in 8%, and was in most instances associated with fat intolerance. In only a few patients was enlargement of the spleen demonstrated, and half of these, though not known to have had malaria, had been in malarious areas and had taken suppressive drugs. Impairment of the liver function, as evidenced by poor response to one or more tests, was not always associated with the above signs and symptoms. The only factors which appeared to bear any relation to the residual symptoms were the duration and the severity of the jaundice. As it is well known that relapses are more likely to occur in patients who have been allowed to resume activity too soon, an attempt was made to correlate the length of period of bed rest with the occurrence of residuals, but as might be expected, no definite result was obtained. Those patients who had had relapses were not more likely to suffer sequels in this series. Some of the alleged recurrences took place at such long intervals after the first attack of jaundice that it seems highly probable that reinfection was the cause. Some of these periods were as long as a year and more. Dietary factors were also considered. Forty-three of the patients had been prisoners of war in the hands of the Japanese. Knowing what we do, it is safe to assume that they suffered from malnutrition and usually also deficiency diseases, yet this handicap did not appear to make them more likely candidates for the residual symptoms of hepatitis. The authors can give no definite information concerning the possibility that their patients suffered from cirrhosis of the liver at a later date. They found no evidence that the sequels which they observed would indicate a greater probability of cirrhosis in these people, though they remark that coarse nodular cirrhosis does occur occasionally during a progressive or recurrent hepatitis. Of course, hepatitis of such a kind is not necessarily the true virus infective hepatitis, and clinicians observing the march of cirrhotic disease have for a long time remarked episodes of hepatitis with jaundice. It would seem that a follow-up investigation of such a series should be undertaken, for only a long-term inquiry will give accurate results. Research on hepatitis is proceeding in a number of countries, including Australia, and by integrating clinical and biochemical data and the histological studies made possible by modern biopsy methods we should know more in the future.

NUTRITION IN PREGNANCY.

THE necessity for ensuring adequate nutrition during pregnancy is, one would think, sufficiently well known, but there must still be many women who do not avail themselves of the opportunities for pre-natal care. Therefore instances of actual deficiency disease will occasionally

¹ *Annals of Internal Medicine*, January, 1947.

be seen even in favoured communities, just as rickets, for example, may sometimes be discovered in the children of careful and well-to-do parents. Carl F. Vilter, Dorcus Morgan and Tom D. Spies have carried out a study of 229 mothers between the ages of eighteen and forty-five years at a nutrition clinic in relation to deficiency disease.¹ It is pleasing to know that the expenses of this research were met by funds raised by a local citizens' committee.

At the outset the authors remark that it seems strange that there has not been any demonstration of direct connexion of malnutrition with conception, for the pauper, who is surely likely to be a candidate for deficiency disease, shows as a rule a high degree of fertility. In their clinic the usual rule held good—the poorer the mother, the larger the family. The factors affecting the needs of the pregnant woman with regard to diet may be accepted as established. The increased metabolic needs, especially in the later months of gestation, are obvious. Yet, as the writers here point out, there are some aspects that are not always remembered. If the mother has poor dietary habits, it may not be easy to correct them; she may, after the fashion of many women, give the best food to her husband and her children. It was found, too, on inquiry, that the quality and sometimes the quantity of the dietary, though usually better among patients of higher economic status, might be unsatisfactory in a surprising number of homes. Previous surveys have amply testified to this. Another important point is that the vomiting and aberrations of appetite observed in the first trimester may influence the dietary throughout the whole of the succeeding period of gestation if firm advice is not given and followed. The growing size of a family also makes the occurrence of malnutrition of a mother more likely. The women studied in this series did not appear to have had previously any signs of a significant dietary deficiency, except in a very few instances. When such symptoms appeared they were most frequently observed during the last three months, or else during lactation. In view of what has been said about women feeding members of their families better than themselves, it is of interest that no fewer than 90 out of the 229 mothers showed their first signs of deficiency three or more years after their last pregnancy. The evidence of the advantages of adequate diets to both mothers and children, apart from the question of actually demonstrated deficiency, need not be further discussed here.

The occurrence of specific syndromes is described in a number of the patients seen. The occurrence of a macrocytic anaemia is regarded by the authors as implying a protein and niacin deficiency, while a pellagrous glossitis is regarded as not merely an indication of a niacin lack, but as implying a deficiency of the whole B complex, and of protein and other essentials. It is further remarked that certain symptoms previously described as complications of pregnancy are now recognized as being part of true deficiency syndromes. Such are the polyneuritis and the macrocytic anaemias of pregnancy. The early appearance of the former may, of course, be related to the vomiting of the early weeks, seeing that there must be a good many women whose thiamin intake at any time allows them little margin. Some good illustrations are given of the demyelization of a peripheral nerve in a young pregnant woman, and of cheilosis and glossitis during pregnancy; these emphasize the importance of thorough examination and a mind alive to such possibilities. One point of practical importance is mentioned in connexion with riboflavin deficiency. Differentiation of the human embryo is accomplished by the end of the third month, and on the analogy of animal experiment there is ground for thinking that a deficiency of riboflavin might have serious results to the fetus during this early period. There has been no correlation of human congenital abnormalities with lack of riboflavin, but perhaps the caution is not ill-founded. Again deficiency of vitamin A, though blamed for blindness in experimental animals, has not been proved to have such significance in the human subject. Still, this is no argument against the need for full supply of all substances known to be necessary for full capacity to grow and to maintain nutrition. Protein is of particular importance

during pregnancy, and this article summarizes well the recent work on the subject. The authors conclude by emphasizing that actual dietary deficiencies do occur in such a series; they lay down the requirements for treatment of women who show signs of such disturbances. A diet of 3,500 to 4,000 Calories is prescribed, including 120 to 150 grammes of protein, with adequate minerals, and providing ten milligrammes of thiamin, five milligrammes of riboflavin, fifty milligrammes of niacin, and seventy-five milligrammes of ascorbic acid. If actual deficiency due to specific vitamin lack is diagnosed, high dosage of the factor concerned is indicated in addition. It has been found that protein hydrolysates are useful where additional protein is considered necessary. A natural source of the vitamin B complex is advised, such as brewer's yeast, crude liver extract or wheat germ. Finally the authors admit that it is difficult to obtain all these dietetic advantages for patients who are in lower economic strata. Physicians in Australia will be as acutely aware of this as housewives, or at least almost so. In any case, there is still not sufficient recognition of the need for advice and care in the early months of pregnancy.

TWO NEW BRITISH MEDICAL ASSOCIATION JOURNALS.

THE first issues of the two new journals to be published by the British Medical Association have arrived in Australia. They are *Abstracts of World Medicine* and *Abstracts of World Surgery, Obstetrics and Gynaecology*. Members of the Association the world over will welcome the appearance of these journals with unfeigned pleasure, for they bear additional witness to what is and must always remain the first care of the Association—the promotion of the medical and allied sciences. Perhaps the average member of the Association is not aware of the extent of the Association's activities in the matter of publications. To begin with, the *British Medical Journal* publishes signed articles by workers in every branch of medicine and it is backed by a series of journals devoted to special studies. These include: *British Journal of Pharmacology and Chemotherapy*; *Thorax*; *British Journal of Social Medicine*; *Archives of Disease in Childhood*; *British Heart Journal*; *British Journal of Industrial Medicine*; *Journal of Neurology, Neurosurgery and Psychiatry*; *Annals of the Rheumatic Diseases*. To this formidable list the two new abstract journals have been added.

In the foreword to the two new journals (the same is used for each) it is explained that in peace time no systematic attempt has so far been made in Great Britain to provide the medical profession with a survey of the world's medical periodicals by means of abstracts. During the two world wars the Medical Research Council published journals of abstracts to meet the needs of British doctors. The success of the Medical Research Council's *Bulletin of War Medicine* during the recent war has encouraged the British Medical Association to attempt to continue the work when it was known that the *Bulletin* would cease publication in 1946.

The new journals are produced under the general direction of the Editor of the *British Medical Journal* and under the special direction of the Editor of Abstracts, Dr. G. M. Findley, and the Assistant Editor, Dr. S. S. B. Gilder. There is also a staff with a "panel of advisers". The task of these people is formidable. One well-known Australian medical author has declared that three-quarters of all that appears in medical journals is not worth publishing. He may be right. Even if we grant that he is, we shall agree that the perusal of the remaining quarter would occupy quite a time; to select what was worthy of publication in abstract form would call for judgement and experience. Already more than one thousand periodicals have been selected for use in the abstracting service. The first issues cover a wide range of subjects and show no signs of the difficulties with which the British printing trade, according to the foreword, is grappling. As a guide to students of medicine in their wider reading these journals should prove invaluable.

¹ *Surgery, Gynaecology and Obstetrics*, November, 1946.

Abstracts from Medical Literature.

RADIOLOGY.

The Bone Changes of Leuchæmia in Children.

B. KALAYJIAN, P. HERBUT and L. ERF (*Radiology*, September, 1946) state that leuchæmic bone changes are for many reasons more common, more extensive and more varied in children than in adults. One of the most common bone changes in childhood leuchæmia is periosteal elevation with new bone formation along the shafts of the long bones. This appears as a linear area of increased density parallel to the shaft, but separated from it. The new bone may be smooth in outline and fairly uniform in density or it may be irregular. It may extend for the entire length of the shaft or over only a small segment, and may be on one side or may completely encase the shaft. Multiple layers of new bone parallel to each other and to the shaft are sometimes present. Several bones are usually involved, and complete skeletal surveys should be made. Similar changes may be revealed at autopsy along the ribs, sternum, skull bones and vertebrae, but they are usually demonstrable radiologically only along the long bones. Accompanying the periosteal changes, or appearing separately, is evidence of expansion of the marrow cavity by leuchæmic infiltration. This results in erosion and thinning of the cortex with generalized bone demineralization. Pathological fractures have been reported. Radiographically, this type of change may be localized to one part of a long bone or unevenly distributed throughout the length of the shaft. There are areas of irregularly decreased density and destruction. The cortex may be atrophic in many areas or it may be apparently thickened owing to leuchæmic infiltration. The density is usually reduced, and the trabecular markings appear to be more prominent than normal because of absorption of some of the finer trabeculae. These latter changes are those more commonly observed in the skull and flat bones. None of the changes described can be said to be specific for leuchæmia as syphilis, osteomyelitis, tuberculosis, typhoid fever, fractures, rickets, scurvy, neuroblastoma, multiple myeloma, Ewing's tumour, lymphosarcoma, and other diseases may produce similar X-ray changes. In many instances, however, in which the clinical evidence may be equivocal and indefinite, the results of peripheral blood studies normal, and the other laboratory evidence unconvincing, the X-ray picture will reveal sufficiently suggestive findings to stimulate bone marrow studies and biopsy to confirm the diagnosis.

The Hypophysial Fossa.

GILBERT W. HEUBLEIN (*American Journal of Roentgenology*, September, 1946) discusses the hypophysial fossa, particularly with regard to normal variants, ophthalmological considerations and certain pathological changes. He states that calcium deposits may be found within the pituitary gland as a result of degenerative changes and

are not necessarily of clinical importance. Faint calcification above the level of the diaphragm, however, is of great importance and more than likely indicates the presence of a Rathke's pouch tumour or other pathological change in this vicinity. Ophthalmoscopic changes occur in the form of primary optic atrophy. Early the disks appear normal, later pallor is noted, and still later loss of substance and secondary generalized retinal arterial narrowing. These latter changes usually indicate permanent damage of some degree. Choked disks are rarely seen and then only with large tumours when the ventricular system is impinged upon or the foramen of Munro obstructed. Emphasis is laid on the following diagnostic features of hypophysial adenoma: (a) uniform and general enlargement of fossa with ballooned appearance, (b) smooth erosion of the ventral wall of the dorsum, or even a scalloping in outline suggesting the presence of a bilobed tumour, (c) a frequent posterior displacement and apparently elongation of the dorsum as a result of actual deepening of the fossa, (d) possible erosion of the ipsilateral anterior clinoid process if an adenoma is eccentric in position. In acromegaly, three types of sellar changes are described: (a) no fossa enlargement or minimal enlargement, but possibly with increased bone condensation changes in the calvarium; (b) a typical ballooned appearance, but showing the dorsum often thicker and denser than normal; (c) extensive destruction as the result of an advanced or malignant type of acidophilic adenoma. This type is differentiated from extrasellar lesions with difficulty. Aneurysms of the circle of Willis will, if large enough, cause marked sellar deformation, and give rise to symptoms identical with those of pituitary tumour. A presumptive diagnosis can be made by finding curvilinear streaks of calcification in the aneurysmal sac on conventional skiagrams. This must be differentiated from sclerosis without aneurysm which is usually asymptomatic. The latter is manifested by double striae of calcific density on a level with or just above the cortico-clinoid foramina.

Pulmonary Adenomatosis.

L. W. PAUL and G. RITCHIE (*Radiology*, October, 1946) state that pulmonary adenomatosis in man is a rare disease of the lungs characterized by the development of multiple nodular adenomatous tumours or by a diffuse hyperplasia of the pulmonary alveolar lining cells. Typically the disease spreads throughout both lungs, interfering greatly with the gaseous exchange in the alveoli and eventually causing death, often with terminal pneumonia and without the occurrence of metastases elsewhere in the body. Adenomatosis constitutes in certain cases a transitional form between normal lung and carcinoma, and must, therefore, be regarded as a potentially precancerous lesion. Dyspnoea was the first and most distressing symptom in five of the nine cases reviewed, and it developed in the remainder during the later stages of the disease. The dyspnoea may be out of proportion to the extent of pulmonary involvement that can be demonstrated radiologically. The second symptom common to all was cough. This occurred as an early and prominent complaint in most of the cases reviewed. The cough was

productive in all cases, and the sputum invariably is described as thin, watery, frothy, mucoid and the like. Radiologically, there are two main types of shadow formation, neither of which by itself is in any way characteristic. In one group the lesions are manifested by an area or areas of homogeneous density resembling in most features that caused by pneumonic consolidation. These areas of density do not as a rule follow a lobar distribution. They often are bilateral and extensive and may involve most of the lung fields. Signs of atelectasis have not been a prominent feature. The second form of the disease is manifested, radiologically, by the presence of nodular or patchy infiltrative shadows, again often widely disseminated throughout both lungs. The nodules are not sharply circumscribed, but have a hazy outline and resemble in many ways the lesions of widely disseminated carcinomatous metastases. Confusion with metastases is likely, and the two can hardly be differentiated solely on the character of the X-ray shadows in the lungs.

Some Observations Concerning Ewing's Tumour Seen in an Army General Hospital.

G. W. HEUBLEIN, S. E. MOOLTEN and J. C. BELL (*American Journal of Roentgenology*, December, 1946) state that, despite its mimicries by other types of small round-cell malignant growths, Ewing's tumour remains a well-defined clinical and pathological entity. Intermittent fever, bone pain and localized swelling are its earliest clinical manifestations, and are frequently preceded by an incident of trauma. With the eventual development of a definite tumour mass the radiological appearance is distinctive and often permits diagnosis, particularly when confirmed by rapid subsidence of the tumour following radiation therapy. Histopathologically the tumour is also well defined and can ordinarily be diagnosed with reasonable assurance by any experienced pathologist. The cell type is distinguished by its lack of variation from its basic pattern even in its metastases, by the uniform clustering of cells into solid sheets without appreciable architecture except that provided by blood vessels or the framework of invaded tissues, by the paucity of mitoses or other "malignant" features seen in more anaplastic tumours, and by the delicacy of structure of the cell body and nucleus. All these features suggest an embryonal type of tumour and point to the usefulness of employing this category of classification of tumours, not only for Ewing's tumour, but for similar undifferentiated malignant growths which may imitate it, such as neuroblastoma of the adrenal medulla, seminoma of the testis and certain others. The embryonal nature of the tumour and its predilection for the earlier age groups possibly reflect an underlying element of dysontogenesis (faulty development) in its aetiology in accordance with the "embryonal rest" theory of tumour origin. Radiological examination is of inestimable value in the diagnosis of all types of bone tumours including Ewing's sarcoma, and is a distinct aid in determining the time and site of biopsy. Repeated radiological examinations are essential in any case in which symptoms suggest early bone sarcoma. Small lytic lesions and slight periosteal reactions

associated with tumours of the soft parts should be regarded with concern when they occur in patients in the second and third decades. In suspected cases a therapeutic test of X-ray irradiation may be invaluable. Judicious deep X-ray therapy is a useful adjunct to surgical treatment in the period prior to operation when the clinical findings are being reviewed and permission is being obtained for operation. Regardless of the form of treatment, the prognosis in Ewing's tumour is grave.

Optochiasmatic Arachnoiditis.

EUGENE PENDERGRASS AND CHARLES PERRYMAN (*American Journal of Roentgenology*, September, 1946) state that chiasmal inflammatory lesions produce a syndrome that is similar to that produced by a tumour in the region of the optic chiasm. The condition is otherwise described as "chronic clisternal arachnoiditis", "chronic local arachnoiditis", and "chronic circumscribed arachnoiditis of the optic chiasm". No single cause has been ascribed to optochiasmatic arachnoiditis. Trauma and infection of the meninges and brain, by syphilis, mastoiditis, sinusitis, petrositis and chronic rhinopharyngitis, have been described as aetiological factors. Some believe that it may be a sequel of encephalitis, multiple sclerosis or tuberculosis. At operation, the arachnoid is thickened, greyish and opalescent instead of transparent. The *cisterna chiasmatis* may or may not be distended with cerebro-spinal fluid. There may be single or multiple arachnoid cysts and the optic nerves and chiasm appear atrophic and are usually enmeshed in adhesions. The patient usually complains only of loss of vision in one or both eyes and of headache which is not characteristic but frequently bifrontal. Ophthalmoscopically the fundi may be normal, but more often there is optic nerve atrophy. Any type of visual field defect or defects may occur in one or both eyes. Four cases of chiasmatic arachnoiditis, one of luetic origin, are presented. The condition cannot be diagnosed by conventional skiagrams, but can be diagnosed by pneumoencephalography. The normal *cisterna* in the region of the optic chiasm and some of the structures within and adjacent to them are described. The encephalographic findings in optochiasmatic arachnoiditis are rather typical in some instances, in others suggestive. These include shadow patterns of adhesions, cysts or complete obliteration of the air shadows of the basal *cisternae* in the region of the optic chiasm.

PHYSICAL THERAPY.

Genetic Effects of Radiations.

T. LEUCUTIA (Editorial, *American Journal of Roentgenology*, September, 1946) states that the sterilizing power of X rays was noted soon after their discovery fifty years ago. It was only in 1927 that Müller found that the Röntgen ray could also produce gene mutations which might lead to abnormal distribution of hereditary material without demonstrable change in the composition of the chromosomes themselves. Spear states that alterations of the chromosomes are of at least two

kinds: (i) changes in the linear arrangement of the chromosome threads resulting from single or double breakages; (ii) changes in the composition of the genes without disturbance of their position on the chromosome thread. The first changes are important from the point of view of the study of the immediate effects of irradiation. The second change may not exert an effect for several generations. It is considered that there is no difference between spontaneous gene mutations and those induced by various types of irradiation. Insects and plants are the most suitable material for the study of the genetic effects of irradiation, but to what extent these results are applicable to man is not clear. However, it would seem that from the point of view of chromosomal changes the accepted "tolerance dose" of irradiation is sufficient to give protection against any ill effects. But from the point of view of gene mutation it is a different matter. The effect is cumulative and the process is irreversible, so that no tolerance dose can be devised to give protection against such changes. The question of the long-range genetic effects induced by radiations arises. Most gene mutations are recessive, so that inherited qualities appear only when the mutated gene meets another gene of the same kind. For independent mutations this would occur after at least 30 and nearer to 100 generations—that is, 750 to 3,000 years. This natural mutation rate may be considerably changed if a fraction of the population is exposed to ionizing radiations. Assume that all spontaneous gene mutations are the result of ionization due to cosmic rays and to β and γ rays from radioelements in the air (although this has not yet been definitely proved): if from now on 1% of the population received on the average 500r during their lifetime, the natural mutation rate would be doubled. In view of the trend towards a more general use of atomic energy, and because the vast majority of gene mutations are deleterious, the problem acquires great importance.

The Medical Use of Radioactive Iodine.

T. LEUCUTIA (Editorial, *American Journal of Roentgenology*, July, 1946) states that radioactive iodine is produced by bombarding metallic tellurium with deuterons in the cyclotron. The most important products are I^{130} with 12.6 hour half-life and I^{131} of eight-day half-life. By varying the length of the bombardment time, the ratio of these two products can be varied within certain limits. The longer the bombardment, the higher the proportion of I^{131} . After a bombardment of three to ten hours, the tellurium is removed from the target and the radioactive iodine is removed by a chemical process. The final solution consists of distilled water and the radioactive isotopes. Sufficient inert iodine in the form of sodium iodide is added to bring the total iodine content to a certain concentration. This solution is then calibrated in millicuries and is administered to the subject by mouth. It was found that the thyroid gland collected iodine rapidly, as a rule within ten minutes after intravenous injection. Previous iodization decreased this collection. It is of particular importance that both the normal and the hyperplastic thyroid take up a larger proportion of a small dose of iodine than

of a large one. In Graves's disease, the thyroid invariably collects less from a second dose of iodine than from the first, and the best measure of the amount collected is the size of the thyroid, a fact which has great bearing upon the amount to be administered. The largest percentage of iodine is deposited in the thyroid in hyperthyroidism and non-toxic goitre; less is deposited in the normal gland and much less when hypothyroidism is present. The three salient facts learnt from extensive studies, which are important from the therapeutic view, are as follows. (i) Thyroid tissue possesses a pronounced selective avidity for the iodine, which in proportion to the size of the gland is from 20 to 200 times greater than in any other tissue of the body. (ii) This avidity is greater in diffuse hyperplasia of the thyroid, in cases in which no iodine has been administered previously, and when the iodine is given in a small dose so as not to overflow the blood stream. (iii) The administration of radioactive isotopes of short half-life permits by β irradiation a selective destruction effect on the thyroid gland. Hertz and Roberts in 1942 treated 29 patients suffering from hyperthyroidism with doses between 0.7 and 28 millicuries, mainly by a single dose. The total amount of radio-active iodine was kept below two milligrammes. Treatment was continued by giving potassium iodide daily for two to four months. These workers claim 20 complete cures among the 29 patients. A warning is issued that the bulk of the radioactive iodine is excreted through the kidneys, and observation over many years will be necessary before the possibility of kidney damage can be ruled out. In addition the dosage given must depend on the degree of over-activity of the thyroid and on the size of the gland, a difficult matter to estimate accurately. However, the possibilities of the method are stressed.

Pyridoxine Hydrochloride in Radiation Sickness.

H. L. VAN HALTERN (*Radiology*, October, 1946) has recorded the effects of pyridoxine hydrochloride on radiation sickness in a group of patients undergoing intensive deep X-ray therapy. The cases were divided into four groups: (i) mild—anorexia and some nausea; (ii) moderate—severe nausea, distaste for food and occasional vomiting; (iii) severe—pronounced nausea and severe vomiting; (iv) late or inflammatory symptoms due to proctitis, enteritis and cystitis. No medication was given to the first group of patients. In all 81 patients were treated. Those in the other three groups from the onset of symptoms received intravenous injections of 25 to 50 milligrammes of pyridoxine hydrochloride in the form of "Hexabetalin". No other medication was given. The injections were given at intervals of from one to four days according to the response. The results were classified in the following three groups: (i) excellent (complete relief of all symptoms), 44 cases; (ii) good (relief of all vomiting and most of the nausea), 28 cases; (iii) poor (no appreciable response), nine cases. In general there was no relief of diarrhoea, tenesmus or frequency of micturition. The authors conclude that the administration of pyridoxine hydrochloride is a harmless and reliable method of relieving radiation sickness.

Bibliography of Scientific and Industrial Reports.¹

THE RESULTS OF WAR-TIME RESEARCH.

During the war a great deal of research was carried out under the auspices of the Allied Governments. It has been decided to release for general use a large proportion of the results of this research, together with information taken with former enemy countries as a form of reparations. With this end in view, the United States Department of Commerce, through its Publication Board, is making a weekly issue of abstracts of reports in the form of a "Bibliography of Scientific and Industrial Reports". This bibliography is now being received in Australia, and relevant extracts are reproduced hereunder.

Copies of the original reports may be obtained in two ways: (a) Microfilm or photostat copies may be purchased from the United States through the Council for Scientific and Industrial Research Information Service. Those desiring to avail themselves of this service should send the Australian equivalent of the net quoted United States price to the Council for Scientific and Industrial Research Information Service, 425, St. Kilda Road, Melbourne, S.C.2, and quote the PB number, author's name, and the subject of the abstract. All other charges will be borne by the Council for Scientific and Industrial Research. (b) The reports referenced with an E number may be obtained in approved cases without cost on application to the Secondary Industries Division of the Ministry of Post-War Reconstruction, Wentworth House, 203, Collins Street, Melbourne, C.I. Copies of these are available for reference in public libraries.

Further information on subjects covered in the reports and kindred subjects may be obtained by approaching the Council for Scientific and Industrial Research Information Service, the Secondary Industries Division of the Ministry of Post-War Reconstruction, or the Munitions Supply Laboratories (Technical Information Section), Maribyrnong, Victoria.

PB 22962. WHITE, W. A. Oxygen poisoning in man: effect of cysteine hydrochloride and ammonium chloride on the time of onset of toxic symptoms. (Bur. of Medicine and Surgery Res. Project X-436, Rept. 1.) August, 1945. 6 pp. Price: Microfilm, 50c.; Photostat, \$1.00.

Nine divers breathed 99% oxygen in a decompression chamber at a pressure of 44.5 pounds per square inch (gauge) after (a) no medication, (b) 1.0 gramme of ammonium chloride, (c) 0.25 gramme of cysteine hydrochloride, (d) 0.7 milligramme of quinine sulphate (control) and (e) 1.5 grammes of cysteine hydrochloride. The drugs were administered two hours before the start of oxygen breathing. The administration of the drugs at the dosage used did not significantly alter the interval from the start of oxygen breathing until the onset of signs or symptoms of oxygen poisoning (oxygen tolerance time). Two tables are attached. This document is from the Naval Medical Centre, Bethesda, Maryland.

PB 1684. Six groups of pamphlets on German medicine (microfilm). 1,430 pp. Price: Microfilm, \$6.00; Enlarged Prints, \$143.00.

This report is a microfilm reel containing reprints from the Laboratory of Organic Chemistry, Utrecht, Holland, reprints of publications of the staff of the scientific laboratory of P. Beiersdorf and Company, Hamburg, reprints from the Institut für Schiffs- und Tropenkrankheiten, Hamburg, and a reprint from the Pharmacologic Institute of the University of Hamburg. The articles included on this reel, all of which are in German, are as follows:

1. Kögel, F., et alii. Über die Bestimmung von d-Glutaminsäure in Tumorphydrolysaten mit Deuterium als Indikator; 9. Mitteilung über die Chemie der Tumoren. (Determination of d-glutamic acid in tumour hydrolysates with deuterium as an indicator; ninth report on the chemistry of tumours.) Hoppe-Seyler's Zeitschrift für physiologische Chemie, 277, 251 (1943). 38 pp.

2. Ruhkopf, Hans. Über die Druckhydrolyse substituierter Barbitursäuren. (Pressure hydrolysis of substituted barbituric acids.) Berichte der deutschen chemischen Gesellschaft, 73, 938 (1940). 4 pp.

3. Ruhkopf, Hans. Zur Kenntnis des Cyclotetramethylene-pyrazolons. (II. mittell.) Study of cyclotetramethylene-pyrazolone. II. Ibid., 72, 1978 (1939). 5 pp.

4. Ruhkopf, Hans. Zur Kenntnis des Cyclotetramethylene-pyrazolons. (III. mittell.) Molekülverbindungen. (Study of cyclotetramethylene-pyrazolone. III. Molecular compounds.) Ibid., 73, 1066 (1940). 3 pp.

5. Ruhkopf, Hans. Über einige Dioxo-pyrazolidine. (Concerning a few dioxo-pyrazolidines.) Ibid., 73, 820 (1940). 3 pp.

6. Germany. Oberkommando der Wehrmacht. Das Tornisterfiltergerät. (Description of portable water filter used by the German Army.) 1941. 16 pp.

7. Institut für Schiffs- und Tropenkrankheiten. Kursus über Tropenmedizin, Tropenhygiene, exotische Pathologie, medizinische Parasitologie. (Courses in tropical medicine, tropical hygiene, exotic pathology and medical parasitology offered by the Institut für Schiffs- und Tropenkrankheiten, Hamburg.) No date. 9 pp.

8. Vogel, H., and Minning, W. Beiträge zur Klinik der Lungen-ascariasis und zur Frage der flüchtigen eosinophilen Lungeninfiltrate. (Clinical aspects of pulmonary ascariasis and the problem of transitory eosinophilic pulmonary infiltrates.) Beiträge zur Klinik der Tuberkulose, 98, 620 (1942). 36 pp.

9. Braune, Johann Friedrich. Über die Verhütung der Bilharziose unter Feldzugsbedingungen, insbesondere über die Gewinnung von Zerkarien-freiem Wasch- und Badewasser. (Prevention of bilharziasis under battlefield conditions, especially on ridding water used for laundry and bathing of Cercaria.) Deutsche tropenmedizinische Zeitschrift, 46, 409 (1942). 18 pp.

10. Vogel, Hans. Die Bilharziosen Afrikas und seiner Nachbarländer. (Types of bilharziasis occurring in Africa and adjacent areas.) Merkblätter des Instituts für Schiffs- und Tropenkrankheiten. Reprint from Deutsche tropenmedizinische Zeitschrift, 46, 15 (1942). 12 pp.

11. Vogel, Hans. Ueber die Nachkommenschaft aus Kreuzpaarungen zwischen Bilharzia mansoni und B. Japonica. (Result of cross-breeding between Bilharzia mansoni and B. japonica.) Zentralblatt für Bakteriologie, Parasitenkunde und Infektionskrankheiten, I. Abteilung, Orig., 149, 319 (1942). 16 pp.

12. Gönner, Rudolf. Zur Lebensdauer menschlicher Mikrofilarien. (The life-span of human microfilaria.) Ibid., 149, 75 (1942). 7 pp.

13. Vogel, Hans. Über Entwicklung Lebensdauer und Tod der Eier von Bilharzia japonica im Wirtsgewebe. I. Teil. (The development, life-span and death of eggs of Bilharzia japonica in host tissue. Part I.) Deutsche tropenmedizinische Zeitschrift, 46, 57 (1942). 23 pp.

14. Minning, W., and Weidner, H. Griftrauen unter besonderer Berücksichtigung Afrikas. (Poisonous caterpillars, those especially of Africa.) Merkblätter des Instituts für Schiffs- und Tropenkrankheiten. Reprint from Deutsche tropenmedizinische Zeitschrift, 46, No. 4 (1942). 8 pp.

15. Minning, W., and Zumpt, F. Skorpione Nordafrikas. (Scorpions of North Africa.) Ibid., 46, No. 1 (1942). 8 pp.

16. Minning, W. Afrikanische Giftschlangen. Teil I. Aussehen, Lebensgewohnheiten und Verbreitung afrikanischer Giftschlangen. Teil II. Giftübertragung, Giftwirkung, Krankheitsbild und Behandlung beim biss afrikanischer Giftschlangen. (Poisonous African snakes. Part I. Appearance, habitat and distribution of poisonous African snakes. Part 2. Venom transfer, poisonous effect, clinical symptoms and therapy of bites of poisonous African snakes.) Merkblätter des Instituts für Schiffs- und Tropenkrankheiten. Reprint from Deutsche tropenmedizinische Zeitschrift, 45, Nos. 20 and 21 (1941). 24 pp.

17. Vogel, Hans. Ueber den Einfluss des Geschlechts-partners auf Wachstum und Entwicklung bei Bilharzia mansoni und bei Kreuzpaarungen zwischen verschiedenen Bilharziaarten. (Influence of the sex partner on growth and development of Bilharzia mansoni and of cross-breeding between different species of Bilharzia.) Zentralblatt für Bakteriologie, Parasitenkunde und Infektionskrankheiten, I. Abteilung, Orig., 148, 78 (1941). 20 pp.

18. Vogel, Hans. Infektionsversuche an verschiedenen Bilharziazwischenwirten mit einem einzelnen Miracidium von Bilharzia mansoni und B. japonica. (Experimental infection of various intermediate hosts of Bilharzia with one single miracidium of Bilharzia mansoni and B. japonica.) Ibid., 148, 29 (1941). 7 pp.

19. Minning, W. Immunbiologische Nachweismethoden bei Bilharziosen. (Immunobiologic diagnostic methods in bilharziasis.) Deutsche tropenmedizinische Zeitschrift, 45, 321 (1941). 3 pp.

20. Vogel, Hans. Die Bedeutung der Bilharziosen für Africa. (The significance of bilharziasis to Africa.) Ibid., 45, No. 9, 278 (1941). 6 pp.

21. Vogel, H., and Minning, W. Bilharziose bei Elefanten. (Bilharziasis in elephants.) Archiv für Schiffs- und Tropenhygiene, 44, 562 (1940). 14 pp.

¹Supplied by the Information Service of the Council for Scientific and Industrial Research.

22. Niyamasena, Song Grant. *Chromosomen und Geschlecht bei Bilharzia mansoni*. (Chromosomes and sex in *Bilharzia mansoni*.) *Zeitschrift für Parasitenkunde*, 11, 690 (1940). 17 pp.
23. Vogel, H. *Hakenwurm- und Ascaridienkuren in der Tropenpraxis*. (Hookworm and ascariis remedies in tropical practice.) *Missionsärztliche Fürsorge*, 1940, 1, 7 pp.
24. Reichenow, Eduard, and Mudrow, Lilly. *Der Entwicklungsgang von Plasmodium praecox im Vogelkörper*. (The development of *Plasmodium praecox* in the avian organism.) *Deutsche tropenmedizinische Zeitschrift*, 47, 289 (1943). 11 pp.
25. Sleyro, Luis. *Die Hausfliege (Musca domestica) als Überträger von Entamoeba histolytica und anderen Darmprotozoen*. (The housefly (*Musca domestica*) as a carrier of *Entamoeba histolytica* and other intestinal protozoa.) *Ibid.*, 46, 361 (1942). 12 pp.
26. Westphal, Albert. *Zur Frage der Mischinfektion von Amöbenruhr und Typhus*. (The problem of mixed infection with amoebic dysentery and typhoid.) *Ibid.*, 46, 258 (1942). 8 pp.
27. Reichenow, Eduard. *Morphologie und Entwicklungsgeschichte der Protozoen*. (Morphology and developmental history of the protozoa.) *Fortschritte der Zoologie*, 5, 41 (1939). 16 pp.
28. Westphal, Albert. *Ein Kulturverfahren für Entamoeba gingivalis und dessen Anwendung für die differential Diagnose von E. gingivalis und E. histolytica*. (A culture method for *Entamoeba gingivalis* and its use for the differential diagnosis of *E. gingivalis* and *E. histolytica*.) *Deutsche tropenmedizinische Zeitschrift*, 45, 685 (1941). 7 pp.
29. Westphal, Albert, and Marschall, Fred. *Amöbenruhr bei Katzen auf bakterieller Grundlage*. (Amoebic dysentery in cats resulting from bacterial infection.) *Virchows Archiv für pathologische Anatomie und Physiologie und für klinische Medizin*, 308, 22 (1941). 27 pp.
30. Reichenow, Eduard. *Zur Kenntnis des Küstenfiebers der Rinder*. (Study of coastal Rhodesian fever in cattle.) *Deutsche tierärztliche Wochenschrift*, 49, 546, 594 (1941). 4 pp.
31. Westphal, Albert. *Experimentelle Amöbenruhr beim Kaninchen*. (Experimental amoebic dysentery in rabbits.) *Deutsche tropenmedizinische Zeitschrift*, 45, 653 (1941). 5 pp.
32. Reichenow, E. *Die Bedeutung der Piroplasmen für Afrika*. (Significance of piroplasmosis for Africa.) *Ibid.*, 45, 86 (1941). 7 pp.
33. Reyer, Wilhelm. *Zur Klärung der Resistenzerscheinungen bei den Darmcoccidien der Warmblüter*. (Explanation of resistance phenomena in intestinal coccidiosis of warm-blooded animals.) *Zentralblatt für Bakteriologie, Parasitenkunde und Infektionskrankheiten, I. Abteilung, Orig.*, 146, 305 (1941). 6 pp.
34. Reichenow, Eduard. *Ostafrikanische Beobachtungen an Trypanosomen*. (Studies on Trypanosomidae of East Africa.) *Archiv für Protistenkunde*, 94, 267 (1940). 25 pp.
35. Reichenow, E. *Der Entwicklungsgang des Küstenfiebererregers im Kinde und in der übertragenden Zecke*. (Developmental processes of the causative agent of bovine piroplasmosis and the tick which transmits it.) *Ibid.*, 94, 1 (1946). 66 pp.
36. Muhlen, P. *Erkennung und Behandlung der Amöbenruhr*. (Diagnosis and treatment of amoebic dysentery.) *Deutsche medizinische Wochenschrift*, 66, 617 (1940). 8 pp.
37. Hastedt, Wilhelm. *Chemotherapeutische Versuche bei Flecktyphus mit besonderer Berücksichtigung von Atebrin und Plasmochin*. (Chemotherapeutic experiments in exanthematous typhus with particular attention to "Plasmoquine" and "Atebrin".) *Deutsche tropenmedizinische Zeitschrift*, 47, 433, 501 (1943). 61 pp.
38. Dahne, Georg. *Verhalten der Retikulozyten bei einer für Malaria spezifischen Therapie*. (Reaction of the reticulocytes to specific antimalarial drugs.) *Ibid.*, 47, 129 (1943). 14 pp.
39. Menk, W. *Die Erkennung und Behandlung akut lebensbedrohender Malariaerkrankungen*. (Teil I, Teil II.) (Diagnosis and therapy of acute, dangerous malarial infections.) *Zeitschrift für ärztliche Fortbildung*, 39, 421, 441 (1942). 11 pp.
40. Menk, W. *Bekämpfung, Vorbeugung, Diagnose und Behandlung des Pappataciefiebers*. (Control, prophylaxis, diagnosis and therapy of pappataci fever.) *Medizinische Welt*, 16, 1235 (1942). 4 pp.
41. Tyroit, Rudolf. *Über die Behandlung einfacher und komplizierter Halsentzündungen nichtdiphtherischer Natur mit Protosil und Vitamin C*. (The treatment of simple and complex non-diphtherial throat infections with protosil and vitamin C.) *Deutsche tropenmedizinische Zeitschrift*, 46, 293 (1942). 5 pp.
42. Menk, W. *Kurze Bemerkung zu Versuchen der Eubasinbehandlung bei Flecktyphus*. (Brief note on experiments with eubasin in treatment of exanthematous typhus.) *Klinische Wochenschrift*, 21, 185 (1942). 2 pp.
43. Mohr, Werner. *Bedeutung und Möglichkeiten der Röntgenuntersuchungen bei Amöbenruhr und ihren Folgezuständen*. (Importance and possibilities of X-ray examinations in amoebic dysentery and its complications.) *Deutsche tropenmedizinische Zeitschrift*, 45, 417 (1941). 12 pp.
44. Mohr, W. *Vitamin C-Stoffwechsel und Malaria*. (Vitamin C metabolism and malaria.) *Ibid.*, 45, 403 (1941). 3 pp.
45. Menk, Walter, and Mohr, Werner. *Kurze Mitteilung über den serologisch-experimentellen Nachweis Antigen- verschiedener Typen des lymphogranulome Inguinale-virus*. (Brief note on the experimental serologic detection of antigen-different types of the lymphogranuloma inguinale virus.) *Klinische Wochenschrift*, 20, 685 (1941). 4 pp.
46. Mohr, Werner. *Wurminfektionen bei den rückgekehrten Afrika-Deutschen; Beobachtungen im Tropeninstitut in den Jahren, 1936-1940*. (Helminthic infections in Germans returned from Africa; observations in the Institute for Tropical Medicine during the years 1936-1940.) *Deutsche tropenmedizinische Zeitschrift*, 45, 307 (1941). 9 pp.
47. Beckermann, F., and Mohr, Werner. *Röntgenologische Erfassung eines Amöbenabszesses nach Kontrastanreicherung der Leber mit Jodsol*. (X-ray diagnosis of an amoebic abscess of the liver, using iodine solution as a contrast medium.) *Röntgenpraxis*, 13, 14 (1941). 6 pp.
48. Mohr, Werner. *Herz-gefäßstörungen bei Malaria*. (Cardiac damage produced by malaria.) *Archiv für Schiffs- und Tropenhygiene*, 44, 521 (1940). 12 pp.
49. Menk, W., and Mohr, W. *Versuche über eine chemotherapeutische Kurzbehandlung des Lymphogranuloma inguinale*. (Experiments on a brief chemotherapeutic treatment of lymphogranuloma inguinale.) *Ibid.*, 44, 447 (1940). 12 pp.
50. Weise, W. *Untersuchungen über die Resorption und Ausscheidung des Atebrins*. I. Methoden zur Bestimmung des Atebrins in Harn, Stuhl und Blut. (Investigations on the resorption and excretion of "Atebrin". I. Methods of determination of "Atebrin" in urine, feces and blood.) *Ibid.*, 41, 715 (1937). 6 pp.
51. Weise, W. *Über die Resorption und Ausscheidung des Atebrins*. (Resorption and excretion of "Atebrin".) *Acta conventus tertii de tropicis atque malariae morbis. Pars II*, 1938, 489. 9 pp.
52. Kesler, A. D. *Behandlung und Vorbeugung des Lichen tropicus*. (Therapy and prophylaxis of Lichen tropicus.) *Deutsche tropenmedizinische Zeitschrift*, 47, 92 (1943). 4 pp.
53. Oesterlin, M. *Beitrag zum Problem der Arzneifastigkeit der Trypanosomen*. (Contribution to the problem of the medicinal resistance of trypanosomes.) *Zentralblatt für Bakteriologie, Parasitenkunde und Infektionskrankheiten, I. Abteilung, Orig.*, 147, 335 (1941). 4 pp.
54. Oesterlin, M. *Sulfonamidverbindungen bei experimenteller Vogel malaria*. (Sulphonamide compounds in experimental avian malaria.) *Ibid.*, 147, 339 (1941). 4 pp.
55. Weise, W. *Die Verbreitung der avitaminosen im tropischen Afrika*. (Distribution of the avitaminoses in tropical Africa.) *Deutsche tropenmedizinische Zeitschrift*, 45, 289 (1941). 7 pp.
56. Weise, W. *Über das Pseudo-methämoglobin (Methaemalbumin)*. N. H. Fairley's. (N. H. Fairley's pseudo-methaemoglobin (methaemalbumin).) *Ibid.*, 45, 218 (1941). 8 pp.
57. Weyer, F. *Die afrikanischen Malariaüberträger*. (The carrier of African malaria.) *Ibid.*, 45, 112 (1941). 8 pp.
58. Weyer, F. *Blutnahrung und Eiproduktion bei Anopheles maculipennis und Anopheles superpictus*. (Blood supply and egg production of *Anopheles maculipennis* and *Anopheles superpictus*.) *Zentralblatt für Bakteriologie, Parasitenkunde und Infektionskrankheiten, I. Abteilung, Orig.*, 147, 343 (1941). 8 pp.
59. Weyer, F. *Neuere Beobachtungen über die Winterruhe bei Anopheles maculipennis*. (Recent observations on the hibernation of *Anopheles maculipennis*.) *Zeitschrift für Parasitenkunde*, 12, 156 (1941).
60. Weyer, F. *Beitrag zur Stechmückenfauna von Mazedonien und Westthrazien*. (Contributions to the culex breeds of Macedonia and western Thrace.) *Deutsche tropenmedizinische Zeitschrift*, 46, 249 (1942). 19 pp.
61. Weyer, F., and Zumpt, F. *Erfahrungen mit "Lauser", einem neuen Bekämpfungsmittel gegen Körperungzeifer*. (Experiences with "Lauser", a new combating agent against body lice.) *Ibid.*, 46, 256 (1942). 9 pp.
62. Weyer, F. *Sandfloh u. Hühnerkammfloh*. (The sand flea and the chicken comb flea.) *Merkblätter des Instituts für Schiffs- und Tropenkrankheiten*. Reprint from *Deutsche tropenmedizinische Zeitschrift*, 46, No. 8 (1942). 12 pp.

British Medical Association News.

SCIENTIFIC.

A MEETING of the Victorian Branch of the British Medical Association was held on March 5, 1947, at the Medical Society Hall, Albert Street, East Melbourne, Dr. A. E. COATES, the President, in the chair.

Anxiety States.

Dr. W. E. WILSON read a paper entitled "The Diagnosis and Treatment of Anxiety States" (see page 452).

Dr. H. F. MAUDSLEY, in opening the discussion, thanked Dr. Wilson for the exposition of a subject which was difficult and of broad scope. He stressed the difficulty in diagnosing the anxiety state, particularly as depressive psychoses often at first appeared in the form of an anxiety state, and were probably more often encountered in general practice than was generally realized. Unfortunately, many symptom complexes could not be relieved by reassurance alone, and in these cases, further investigation by psychiatric methods—for example, with the patient under "Pentothal" narcosis—might be required to elucidate the origins of the symptoms. The early evidence of psychotic and anxiety states was easily confused, and clear differentiation was difficult, methods of diagnosis not being clearly defined. It was therefore important to exclude true psychotic factors before making a diagnosis of anxiety state.

Dr. G. A. PENINGTON remarked that Dr. Wilson's clinical observation over a period of years had brought him to an evaluation of the psychosomatic aspect of medicine. Fear was the basis of an anxiety state, and its manifestations were protean and might appear in one or more systems of the body. The mode of onset of the symptoms was often suggestive of the diagnosis, and the patient's personality would often determine the mode of reaction to the precipitating agency of fear. Maladjustment of the subject was the primary factor, and these medical problems were also social problems. By his close contact with patients, the general practitioner was in the best position to judge when social problems were likely to precipitate these maladjustments. Early toxic goitre was one of the most obscure conditions when allied or confused with anxiety states. In these cases a correct diagnosis was of vital importance and might depend on estimation of the basal metabolic rate. Exclusion of chronic sepsis, such as tuberculosis, was of importance, and in these cases the age of the patient and the duration of symptoms might be of significant value. In contradiction to Dr. Wilson, Dr. Penington did not favour the administration of a placebo, but considered that the exhibition of hypnotics as a temporary measure was often of value. In conclusion, Dr. Penington said that Dr. Wilson's paper was an exposition of the value of clinical sense in the elucidation of the problems of the anxiety state.

Dr. A. J. M. SINCLAIR compared the present concept of psychosomatic manifestations with the early concept of disease as "organic" or "functional". The conception of psychosomatic disease regarded the patient as a unit, as Dr. Wilson had done in his series of cases. Unfortunately reassurance alone was not always successful, and the patient became dependent on the personality of the practitioner, because of his own deficiencies in personality. In these cases it might be necessary to confront the patient with the mechanisms of his anxiety, and if this was unsuccessful further methods of psychiatric therapy such as narcosynthesis might be required.

Dr. R. P. GURRY emphasized that the efficacy of treatment must depend to a large extent on the ability of the patient to appreciate the mechanism whereby his symptoms were produced. Failure on his part to understand the mechanism might lead to persistence of symptoms.

Dr. J. E. J. CADE pointed out that anxiety comprised two components, fear and uncertainty. There were two degrees of anxiety state. The hyperacute type was encountered only in abnormal conditions such as warfare, when hypnotics alone appeared to be effective. In the commoner acute anxiety states, the major requirement in the physician was the virtue of patience. Perhaps oral administration of the alcoholic beverages could well be of assistance in the elucidation of the patient's problems.

Dr. GUY SPRINGTHORPE considered that the major contribution in Dr. Wilson's paper was the emphasis on suggestion in the production and alleviation of symptoms. The neglect of this factor was one of the effects of specialism and of the extension of new therapeutic agents in general

treatment. In the treatment of children, suggestion might be a major factor in precipitating symptoms.

Dr. Coates, from the chair, drew attention to the relative absence of anxiety states in prisoner-of-war camps, where the major concern of men was in obtaining food and where work was ample to keep men fully employed. As a surgeon, Dr. Coates had noticed that appreciation of psychosomatic factors in the production of symptoms had resulted in the performance of fewer exploratory laparotomies.

Dr. Wilson, in reply, said that he did not claim that all symptoms due to anxiety states were relieved by reassurance. However, the symptoms of a great proportion of patients were relieved, and psychotic patients were not commonly treated in general practice. As a rule certain major worries or fears could be elucidated, and Dr. Wilson had found it unnecessary to give his patients full explanations of the mechanism of anxiety.

Medical Societies.

MELBOURNE PÆDIATRIC SOCIETY.

A MEETING of the Melbourne Pædiatric Society was held on October 9, 1946, at the Alfred Hospital, Melbourne, Dr. A. P. DERHAM, the President, in the chair. Part of this report appeared in the issue of April 5, 1947.

Virilism.

Dr. H. C. COLVILLE showed a girl, aged eight years, who had first come under observation at the age of three and a half years because of abnormality of the genitalia. The external genitalia were generally of the female type and a vaginal orifice was present. However, the clitoris was enlarged to the size of a normal penis. Under anaesthesia it was determined that the vagina was about a quarter of an inch long and terminated blindly. No testes could be found when the vaginal canal was exposed. Normal looking Fallopian tubes and ovaries were discovered when the peritoneum was opened. Portion of the right ovary was removed for biopsy, and the following pathological report was given: "Normal ovarian tissue with abundant primary follicles." At the age of four years suprapubic hairs were developing. At this time the androgen content of the urine was found to be 14 milligrammes *per centum*. An X-ray film taken after injection of air into the perirenal spaces revealed what appeared to be enlargement of the right adrenal gland. Soon after this the right adrenal gland was exposed through a lumbar incision; but the organ was found to be normal in size and external appearance. At the urgent plea of the parents the large clitoris had been removed in June, 1945. At the time of the meeting the child was developing a deep voice, hairy legs and an incipient moustache. The androgen content of the urine was now 26 milligrammes *per centum*.

Dr. J. G. WHITAKER said that some years earlier he had been asked by Dr. Lawrence Stokes to examine a patient with this condition. The girl was three or four years old and the androgen content of the urine was considerably raised. Dr. Whitaker had used Young's technique in exploring the adrenals; both adrenals were simultaneously exposed and both appeared normal. There was no evidence of tumour formation. About one-half of one adrenal was removed. The child recovered, though convalescence was very stormy. Subsequent to this the androgen content of the urine fell greatly, but rose again later. This case paralleled Dr. Colville's, and Dr. Whitaker suggested that Young's technique might be followed again.

Dr. LAWRENCE STOKES agreed that the two cases were similar. He had hoped to find pathological changes in the adrenal, as cases had been reported in which the syndrome was associated with a tumour, the removal of which resulted in a cure. In this case subsequent histological examination of the biopsy material revealed hyperplasia of the suprarenal gland. The urinary androgen content had fallen, but subsequently slowly rose again to about seventeen milligrammes *per centum*. The patient lived in New South Wales, but he had heard that she was well, though she had developed a male voice. He had suggested to her local doctor that a specimen of urine be sent for androgen estimation. After the operation the pubic hairs had fallen out, but Dr. Stokes was not certain whether these had grown again. Dr. Stokes said that he would endeavour to investigate the case more thoroughly.

Dr. RUSSELL HOWARD said that he did not agree with the radiological interpretation. The adrenals were not well out-

lined in the films shown. The left adrenal gland should be explored, and if a tumour was found, it should be removed.

Dr. H. F. BETTINGER said that another case had been reported at the Children's Hospital. The girl was about seven years old and had a tumour which was calcified in parts. A considerable decline in urinary androgen values followed the operation. He had not learnt what had happened since. Whether adrenal tissue should be removed if no tumour was found was difficult to decide. Patients were not infrequently seen at the Women's Hospital with minor grades of the condition, especially hirsutism. In cases associated with hyperplasia and overaction of the gland very little could be done. The results after removal of adrenal tissue did not always justify the procedure. One of the greatest dangers was that the patient became neurotic and frequently changed doctors. In the case of these older patients the most important approach was psychological.

Dr. L. WAIT said that he remembered the case quoted by Dr. Bettinger. The child suffered epileptiform seizures as well, and these ceased after Dr. John Begg had removed a tumour about the size of an orange from the left suprarenal gland. The patient was now well, and the external genitals were not so large, though she still had pubic hairs. Her outlook on life had changed and she behaved as a normal female child.

Dr. Colville thanked those who had contributed to the discussion.

(To be continued.)

Naval, Military and Air Force.

APPOINTMENTS.

The undermentioned appointments, changes *et cetera* have been promulgated in the *Commonwealth of Australia Gazette*, Number 55, of March 20, 1947.

AUSTRALIAN MILITARY FORCES.

Australian Army Medical Corps.

NX102551 (NP10081) Major (Temporary Lieutenant-Colonel) J. R. Nimmo relinquishes command of No. 105 (Adelaide) Military Hospital and is appointed to command No. 115 (Heidelberg) Military Hospital, 20th December, 1946.

VX12974 Lieutenant-Colonel (Temporary Colonel) J. M. Blair, O.B.E., relinquishes command of No. 115 (Heidelberg) Military Hospital and is placed upon the Regimental Supernumerary List, 20th December, 1946.

N90615 Major (Temporary Lieutenant-Colonel) F. N. Lynch relinquishes command of 101st Australian General Hospital and is placed upon the Regimental Supernumerary List, 20th December, 1946.

VFX81148 Major (Temporary Lieutenant-Colonel) Lady W. I. E. Mackenzie is placed upon the Regimental Supernumerary List, 27th January, 1947.

WX36891 (WP4588) Lieutenant V. S. Donegan is transferred to the Special List, 23rd October, 1946.

V82214 Lieutenant H. E. Barnard is transferred from Australian Army Pay Corps, 18th November, 1946.

QX41375 (QP2307) Lieutenant (Temporary Captain) W. L. Lenton is transferred to Australian Army Records Staff, 28th November, 1946.

NX207659 Captain J. J. G. McGirr is removed from the Regimental Supernumerary List, 4th November, 1946 (in lieu of the notification respecting this officer which appeared in Executive Minute No. 263 of 1946, promulgated in *Commonwealth Gazette* No. 5 of 1947).

QX6071 Colonel K. B. Fraser, E.D., relinquishes the appointment of Deputy Director of Medical Services, Headquarters, Northern Command, ceases to be seconded to the Australian Imperial Force, resumes duty with the Active Citizen Military Forces, and is appointed Deputy Director of Medical Services, Headquarters, Northern Command (part-time duty), 12th February, 1946 (in lieu of the notification respecting this officer which appeared in Executive Minute No. 84 of 1946, promulgated in *Commonwealth Gazette* No. 78 of 1946).

28th Australian Camp Hospital.—SX34533 Captain R. S. Colton is transferred to Australian Army Medical Corps Reinforcements, 4th December, 1946.

SX2910 Lieutenant-Colonel W. M. Irwin is transferred to the Reserve of Officers (Australian Army Medical Corps), 19th December, 1946.

QX6254 Major (Temporary Lieutenant-Colonel) R. R. Winton relinquishes the rank of Temporary Lieutenant-

Colonel and is transferred to the Reserve of Officers (Australian Army Medical Corps), 27th November, 1946.

Reserve of Officers.

The undermentioned officers are transferred to the Reserve of Officers on the dates indicated. Where applicable they cease to be seconded and relinquish any temporary rank held with effect from the date of transfer to the Reserve of Officers:

WX34807 Captain D. C. Pope, 22nd November, 1946.

No. 105 (Adelaide) Military Hospital.—S2894 Captain (Temporary Major) J. E. Barker, 15th November, 1946.

No. 110 (Perth) Military Hospital.—Captains (Temporary Majors) VX90031 G. C. McKechnie, 15th November, 1946, and WX41036 E. J. Green, 20th November, 1946, and WX22993 Captain A. T. H. Jolly, 16th November, 1946.

No. 112 (Brisbane) Military Hospital.—QF143588 Captain J. Crosier, 20th November, 1946.

No. 113 (Concord) Military Hospital.—NX157537 Captain (Temporary Major) H. O. O. Leggo, 16th November, 1946, and NX203245 Captain F. L. Ritchie, 8th November, 1946.

109th Australian Convalescent Depot.—WX11107 Major L. P. Gray, 9th November, 1946.

Inter-Service Medical Wing Demobilization Centres (Australian Military Forces Component).—NX201731 Captain E. V. Peipman, 12th November, 1946.

VX102074 Captain (Temporary Major) T. V. Walpole, 6th December, 1946.

No. 102 (Holland Park) Military Hospital.—QX59111 Captain I. A. Lester, 27th November, 1946.

No. 112 (Brisbane) Military Hospital.—Captains NX117499 P. A. Rundle, 9th October, 1946, and QX62639 S. Gohstand, 7th December, 1946.

No. 115 (Heidelberg) Military Hospital.—VX138726 Captain J. Bornstein, 6th December, 1946.

16th Australian Camp Hospital.—Captains NX200122 G. Clifton-Smith and NX203638 M. H. Johnson, 30th November, 1946.

Inter-Service Medical Wing Demobilization Centres (Australian Military Forces Component).—Captains NX203501 R. H. Orr, 30th November, 1946, NX202582 A. B. Paul, 3rd December, 1946, and VX94551 G. T. S. Connolly, 4th December, 1946.

101st Australian General Hospital (Australian Imperial Force).—WX22863 Captain J. D. Craddock, 13th December, 1946.

No. 113 (Concord) Military Hospital.—NX157654 Captain H. Segal, 5th December, 1946.

No. 115 (Heidelberg) Military Hospital.—Captains TX6131 F. M. Moore, 20th December, 1946, and VX94457 J. E. Graves and VX94354 A. O. Rosenhain, 24th December, 1946.

The undermentioned officers are transferred to the Reserve of Officers on the dates indicated, and, where applicable, they cease to be seconded. Officers holding temporary rank relinquish such temporary rank on the date of transfer to the Reserve of Officers and are granted from such date honorary rank on the Reserve of Officers equivalent to the temporary rank relinquished:

106th Australian General Hospital.—VX39251 Captain (Temporary Major) R. F. A. Strang, 6th December, 1946.

107th Australian Convalescent Depot.—VX117283 Captain (Temporary Major) L. F. Irwin, 6th December, 1946.

Retired List.

The undermentioned officers are placed upon the Retired List on the dates indicated with permission to retain their present substantive rank and wear the prescribed uniform. Where applicable, officers cease to be seconded and relinquish any temporary rank held, with effect from the date of placement upon the Retired List:

111th Australian General Hospital.—VX133274 Captain O. Rochlin, 15th November, 1946.

No. 113 (Concord) Military Hospital.—NFX117870 Captain (Temporary Major) M. G. Fleming (*née* Lusby), 8th November, 1946.

V85447 Lieutenant (Temporary Captain) C. J. Coleman, 5th December, 1946.

Reserve Citizen Military Forces.

NX126731 Colonel (Temporary Major-General) R. W. Walsh, D.S.O., V.D., is promoted Major-General, 1st September, 1942, relinquishes the appointment of Director of Medical Services, Headquarters, First Australian Army, and is transferred to the Reserve of Officers (Australian Army Medical Corps), 22nd July, 1943. (In lieu of notification respecting this officer which appeared in Executive Minute No. 365 of 1943, promulgated in *Commonwealth Gazette* No. 218A of 1943.)

2nd Military District.—The resignation of Honorary Captain L. C. Dunlop of his commission is accepted, 12th December, 1946.

The undermentioned officers are retired: Captain E. F. Fletcher, Honorary Captains L. R. Finlay-Jones and L. H. Judd and Captain G. H. Moore, 5th December, 1946, Captain L. Abramovich, 10th December, 1946, Honorary Captains H. V. D. Baret and C. W. Luscombe, 13th December, 1946, Lieutenant-Colonel T. M. Furber and Honorary Captain N. D. Campbell, 17th December, 1946. Captain J. N. Carter is placed upon the Retired List with permission to retain his rank and wear the prescribed uniform, 24th December, 1946.

3rd Military District.—The following officers are retired, 20th November, 1946: Honorary Captain P. R. Brett, Captain G. Cohen, Honorary Captains J. Gibson and G. E. Murphy, Captains J. O'Rourke and B. P. K. Sullivan, Honorary Captain T. Schlicht and Captain H. L. Stores. The resignation of Captain D. G. Stewart of his commission is accepted, 20th October, 1946. The notification respecting Colonel (Honorary Brigadier) H. G. Furnell, C.B.E., D.S.O., E.D., which appeared in Executive Minute No. 177 of 1946, promulgated in *Commonwealth Gazette* No. 182 of 1946 is withdrawn.

2nd Military District.—The undermentioned officers are placed upon the Retired List with permission to retain their ranks and wear the prescribed uniform, 6th November, 1946: Lieutenants J. L. Pollock, B. L. Ricketson and E. C. Throsby. Lieutenant U. M. Munter is placed upon the Retired List with permission to retain her rank and wear the prescribed uniform, 31st October, 1946.

3rd Military District.—Lieutenant D. Downes is placed upon the Retired List with permission to retain her rank and wear the prescribed uniform, 30th October, 1946.

2nd Military District.—The undermentioned officers are placed upon the Retired List with permission to retain their ranks and wear the prescribed uniform, 28th November, 1946: Lieutenants J. R. Baines, J. F. Bell, B. I. Cooper and H. Pritchard.

3rd Military District.—Captain W. K. Davenport is retired, 20th November, 1946.

1st Military District.—The notification respecting Colonel K. B. Fraser, E.D., which appeared in Executive Minute No. 84 of 1946, promulgated in *Commonwealth Gazette* No. 78 of 1946, is withdrawn.

Special Correspondence.

CANADA LETTER.

FROM OUR SPECIAL CORRESPONDENT.

Medical Stocktaking.

THE Federal Department of Health and Welfare in Ottawa recently released a "Survey of Physicians in Canada" which has given, in 66 pages, a remarkably well-documented picture of Canada's present problems in the distribution of medical care. This letter will be given over entirely to an abstract of this survey.

Geographical similarity to Australia made essential a consideration of the ratio of medical practitioners to the population. In 1945, Australia averaged 1,139 persons per medical practitioner, while Canada had only 998 persons per medical practitioner (1946 figures). Queensland had fewest doctors relative to population (one to 1,448 persons); New Brunswick had one practitioner to 1,597 and Saskatchewan had one to 1,504 persons. Australia's best coverage was in New South Wales and the Capital Territory (one to 1,067), while Canada's was in Ontario with one doctor per 843 persons. Sweden, South Africa, New Zealand and the Argentine would all appear to be better supplied with doctors than Canada.

It has been widely assumed that Canadian medical schools have been turning out far more graduates than could be absorbed. Actually the ratio of doctors to population was the same in 1901 as in 1941. Admittedly, improved methods of transportation have greatly increased a doctor's usefulness to his community. However, the most isolated sections are as badly off as ever, except where aircraft or snow-mobiles can be used. The ratio of rural coverage to urban is well shown in Saskatchewan where one of its few urban areas (65% urban) has one doctor for 792 persons, while in an area 97.5% rural, there is one physician for 11,039 scattered inhabitants. The 30% of Canada's people who live in the seven largest cities are provided with 51% of the nation's doctors.

Of Canada's doctors 55% are general practitioners, and their ratio per population averages one per 1,836 persons. Of Canada's doctors, 21% are under thirty-five years of age, 27% are thirty-five to forty-four, 30% are forty-five to fifty-nine, and 20% are sixty years of age or older. Of the nation's practitioners 3% are women.

In general the provinces whose inhabitants paid the highest *per capita* income tax were the best supplied with medical practitioners.

For the next five years it is estimated that an average of 627 doctors will be graduated from Canadian medical schools, as compared with a yearly average of 497 in the six pre-war years. A recent survey of undergraduate veterans showed that 1,549 out of 27,008 (5.7%) favoured medicine as their future profession.

The direction which medical practice must take if it is to meet its changing responsibilities is suggested by the well-documented estimate that in Canada the number of persons sixty-five years of age or over will nearly double between 1941 and 1971.

One impressive fact is brought out concerning hospitalization and its *per capita* increase in recent years. Public and private admissions increased from 574,000 in 1932 to 1,284,000 in 1944. This represents a rise from 58 per thousand of population in 1932 to 110 per thousand in 1944.

The report concludes with an estimate of the future, in which the problem of the exodus of Canadians to the United States in search of greater medical opportunities is aired. Canada is becoming acutely conscious of this tendency today, but so far the Federal Government has taken no steps to reverse the tide by offering aid to provincial universities, in order that they may pay decent salaries and subsidize medical research.

Correspondence.

AN APPEAL.

SIR: Over the past seven years I have been developing channels of public education in health and medical subjects in Australia. At present, a weekly printed article has a circulation of 700,000, and a weekly broadcast is estimated to be listened to by half a million school children and as many adults. Other avenues of smaller circulation are also developed.

I would be glad to receive suggestions and material from fellow practitioners for publication through these channels. The material should be authoritative, and have reference to current medical literature. Comments on the material already published will be welcomed.

As it is desirable to preserve my anonymity it would be appreciated if you would receive and forward correspondence through your office.

Yours, etc.,
"MEDICO".

March 25, 1947.

[Letters addressed to "Medico", care of this office, will be redirected to him.—EDITOR.]

THE BENEFICIAL EFFECTS OF YEAST IN DIABETES MELLITUS.

SIR: No one will disagree with the title of an article, "The Beneficial Effects of Yeast in Diabetes Mellitus", which was contributed by Dr. L. J. A. Parr and Dr. Eva Shipton to your issue of March 22, 1947. The necessity of incorporating the maximum vitamin content of all alphabetical varieties into every diabetic diet, paying simultaneous concern to questions of palatability and cost, is constantly before those who undertake the grave responsibility of restricting for all time the natural tastes of man for his food, whether in variety or degree. The modern diabetic diet is usually theoretically adequate, in Australia at least, in the fat soluble vitamins, but has its narrowest safety margin in the vitamin B complex, particularly thiamin. Owing to modern methods of food manufacture and preparation, inadequate obedience on the part of the patient, or for seasonal or economic considerations, this safety margin may become obliterated with ease. There is evidence also that vitamin B utilization is increased in diabetics, and even some contrary evidence that in the widespread chemical disturbances of the diabetic state, vitamin is less able to fulfil its metabolic destiny. For this reason, we have routinely fortified our diet at the Royal Prince Alfred Hospital Clinic with wheat

germ concentrate. Generous meat and legume rations do the rest. The role of thiamin deficiency in the neuropathies of diabetes is still undecided, although the consensus of opinion is that massive doses (at least 50 milligrammes daily) reduces by a fraction the slow recovery of the degenerate neuroses. The raw tongue, cheilosis, and even ankle oedema seen in the long untreated diabetic have been proven by therapeutic tests to be manifestations of a concomitant vitamin B deficiency.

These well-known facts are universally accepted as secondarily not primarily aetiological in their significance. To suggest on the basis of semi-relevant animal experiments and on a published series of four clinical observations, that a vitamin B deficiency plays any serious part in the cause or cure of this disorder is frankly preposterous. Once again the hope of being able to dispense with insulin, of even being cured, which advertisement of such claims in the lay Press would raise in the communal breast of the diabetics of this land, would have to be crushed as they have had to be crushed before when prickly pear extract, periwinkle, vitamin C *et cetera* have been advocated as potential avenues of escape from the rigid discipline of the diabetic life.

The authors' chief thesis would appear to be that there is some virtue in hydrolysed yeast as a diabetic remedy which is not discernible in anything less than seven of its known constituents. Gaebler's results with this mixture of yeast components still await confirmation, even from the experimental laboratory. To those familiar with the extraordinary and sudden vicissitudes of degree to which the diabetic state is liable, the account of lessened insulin requirements and single blood sugars months apart is, to say the least, most unconvincing. The period of months required for slight improvement is very unlike any specific metabolic effects with which we are more familiar. The only rapid response was in the case of a drunkard whose liver cells improved in glycogenetic function on high vitamin B therapy, and abstinence from alcohol. The vagaries of clinical *diabetes mellitus* are such that it is undesirable, even dangerous, to publish such loose reports before animal experimentation has offered an indubitable invitation to the therapist. By all means, let us give diabetics, in fact the whole community, more vitamin B as yeast if you will, but there is absolutely no justification for informing a diabetic that his malady will thereby be ameliorated, "that in the acute cases the response may be almost unbelievable", "that yeast therapy eradicated ketosis".

Let us await controlled proof of its beneficial influence before any fanciful theorizing as to where it acts, or whether vitamin B deficiency can influence the world incidence of diabetes, or whether yeast administration represents "a big step forward in the therapy of the disease".

If I am wrong, and I am often wrong, and brewer's yeast becomes routine in the therapy of *diabetes mellitus*, it will be comforting to know that the selling profits will be distributed amongst the brewers rather than the vitamin sellers.

Yours, etc.,
KEMPSON MADDOX.

"Locarno",
141, Macquarie Street,
Sydney.
March 28, 1947.

THE TREATMENT OF ACUTE PERFORATION IN PEPTIC ULCER.

SIR: With the utmost deference, as is due to the experience and authority of the author, so vastly greater than my own, may I submit some comments on Mr. A. J. Trinca's article (THE MEDICAL JOURNAL OF AUSTRALIA, March 29, 1947) on the surgical treatment of perforated peptic ulcer.

Mr. Trinca submits figures by which he endeavours to prove that the drainage tube is "a lethal weapon" which can do nothing but harm. These show that the incidence of pulmonary complications and of wound infection were very greatly reduced in a series of cases in which no drainage was used as against a series which was drained; but they also show, with equal clarity, the reverse of what Mr. Trinca would have them show, in that the percentage incidence of residual abscesses—subphrenic or pelvic—was greatly increased in the non-drained cases.

Furthermore, there is no evidence that the two series of cases are truly comparable. Apart from the factors of age, site and size of the ulcer, and duration of perforation, such matters as nutrition and the presence or absence of dehydration or of coexisting disease, particularly cardiac or pulmonary, must be equal in the two groups before valid conclusions can be drawn from such results. Even such an

apparently minor matter as the use or otherwise of tobacco must be considered, since it is now well recognized that, other things being equal, smokers are much more prone to post-operative "chest" than non-smokers.

Finally, it is a reasonable assumption, in the absence of any specific statement to the contrary, that since only 165 cases out of a total of 568 were drained, these cases were generally speaking those who were the most ill, either from generally poor condition, coexisting disease, or because bacterial peritonitis was far advanced.

Mr. Trinca lists a formidable array of ill-effects from the use of the drain tube; but are these in fact not so much the effects of drainage *per se* as of drainage incorrectly used? That a drain tube which is too rigid, too large, or is left in too long can do very great harm is undoubted, but does Mr. Trinca really believe that a soft rubber drain left in position for no more than twenty-four hours will produce, for instance, a duodenal, gastric or ileal fistula?

In the light of modern knowledge of the functions of the peritoneum, there seems no doubt that in the past drain tubes have been used unnecessarily and indiscriminately; but it is a far cry from admitting that fact to accepting the assertion that the use of drainage in diffuse peritonitis is never justified, and that it must in all cases be harmful. Surely the question of "to drain or not to drain" is of too great importance to be decided without the most careful consideration of all available evidence, and with due care to avoid both the Scylla of unwillingness to accept new ideas and the Charybdis of undue reliance upon possibly misleading statistics.

Yours, etc.,
W. R. LANE.

Castlemaine,
Victoria,
April 1, 1947.

SPONTANEOUS RUPTURE OF THE SPLEEN.

SIR: I read with much interest Dr. Pullen's article dealing with spontaneous rupture of the spleen.

I would like to mention that recently I have treated successfully a similar case. Unfortunately no accurate records have been kept.

Yours, etc.,
J. KNIGHT.

Canowindra,
New South Wales,
April 1, 1947.

Australian Medical Board Proceedings.

NEW SOUTH WALES.

THE undermentioned have been registered, pursuant to the provisions of the *Medical Practitioners Act, 1938-1939*, of New South Wales, as duly qualified medical practitioners:

- Loebel, Robert Heinrich, approved for registration in terms of Section 17 (B) of the *Medical Practitioners Act, 1938-1945*, 47-49, Bayswater Road, King's Cross.
- Lucas, Otto Nathan, approved for registration in terms of Section 17 (B) of the *Medical Practitioners Act, 1938-1945*, 278, Old South Head Road, Watson's Bay.
- Mangold, Stephen, approved for registration in terms of Section 17 (B) of the *Medical Practitioners Act, 1938-1945*, 77, Myall Street, West Concord.
- Polk, Levie, approved for registration in terms of Section 17 (B) of the *Medical Practitioners Act, 1938-1945*, Newcastle Street, Rose Bay.
- Protopopoff, Nicholas Paul, approved for registration in terms of Section 17 (B) of the *Medical Practitioners Act, 1938-1945*, 41, King Street, Waverton.
- Reval, Arthur, approved for registration in terms of Section 17 (B) of the *Medical Practitioners Act, 1938-1945*, 137, Macquarie Street, Sydney.

Nominations and Elections.

THE undermentioned have applied for election as members of the New South Wales Branch of the British Medical Association:

- Macarthur, Robert James, M.B., B.S., 1946 (Univ. Sydney), Caveat Street, Bombala.
- Burton-Bradley, Burton Gyrth, M.B., 1945, B.S., 1946 (Univ. Sydney), c.o. Dr. J. H. Rieckard, Wyong.

Stafford, Richard Stanley, M.B., B.S., 1940 (Univ. Sydney), 5, Belgrave Street, Kogarah.
Landecker, Hans Martin, registered under Section 17 (b) of the *Medical Practitioners Act*, 525, New South Head Road, Double Bay.

Obituary.

EDGAR SELWYN HARRISON.

We regret to announce the death of Dr. Edgar Selwyn Harrison, which occurred on April 3, 1947, at Sydney.

THE FEDERAL MEDICAL WAR RELIEF FUND.

THE following contributions to the Federal Medical War Relief Fund have been received:

New South Wales.

K. S. Richardson, £21.
Anonymous, £10 10s.
Ethel B. Durie, £5 5s.
R. R. Macdonald, £3 3s.
Total: £39 18s.
Grand total: £18,825 11s. 10d.

THE RUPERT DOWNES MEMORIAL FUND.

THE committee controlling the Rupert Downes Memorial Fund desires to announce that it has fixed April 30, 1947, as the last day for receiving subscriptions. The amount already subscribed is £592. It would be much appreciated if those who have not yet subscribed to the fund, but wish to do so, would forward their cheques as soon as possible to the Royal Australasian College of Surgeons, Spring Street, Melbourne, made payable to the "Alan Newton Trust Account".

Notice.

THE Mathison Memorial Lecture, founded by subscription to provide a memorial of Dr. Gordon Clunes McKay Mathison, who was killed at Gallipoli on May 18, 1915, is to be delivered this year by Dr. Reginald Webster on Thursday, May 15, in the Anatomy Lecture Theatre, University of Melbourne. The subject of the lecture will be "Observations Based on Laboratory Experience in Tuberculosis". Professor P. MacCallum, Dean of the Faculty of Medicine, will preside.

Medical Appointments.

Dr. E. W. Kyle has been appointed an examiner under the provisions of the *Nurses Registration Act*, 1921-1946, of Western Australia.

Dr. C. H. Wood has been appointed government medical officer at Gilgandra, New South Wales.

Dr. F. M. Hollinshead has been appointed government medical officer at Bingara, New South Wales.

Dr. B. Short has been appointed medical officer, Aboriginal Settlement, Palm Island, Queensland, in pursuance of the provisions of *The Public Service Acts*, 1922 to 1945.

Books Received.

"Twice Their Prisoner", by W. I. Summons; 1946. Melbourne: Oxford University Press. 8½" x 5½", pp. 198, with illustrations. Price: 12s. 6d.

"Postgraduate Obstetrics", by William F. Mengert, M.D.; 1947. New York, London: Paul B. Hoeber, Incorporated. 9½" x 6", pp. 308, with many illustrations. Price: \$5.00.

"Parenteral Alimentation in Surgery: With Special Reference to Proteins and Amino Acids", by Robert Elman, M.D.; 1947. New York, London: Paul B. Hoeber, Incorporated. 9½" x 6", pp. 306. Price: \$4.50.

"Advice to the Expectant Mother on the Care of Her Health and that of Her Child", by F. J. Browne, M.D., D.Sc., F.R.C.S.E., F.R.C.O.G.; Eighth Edition; 1947. Edinburgh: E. and S. Livingstone, Limited. 7½" x 4½", pp. 50. Price: 9d.

"On the Contribution of Clinical Study to the Physiology of the Cerebral Motor Cortex", by F. M. R. Walsh, M.D., D.Sc., F.R.C.P., F.R.S., Hon.D.Sc. (National Univ. Ireland); The Victor Horsley Memorial Lecture Delivered at the National Hospital, Queen Square, 27th November, 1946; 1947. Edinburgh: E. and S. Livingstone, Limited. 7½" x 4½", pp. 32. Price: 1s. 6d.

Diary for the Month.

APRIL 14.—Victorian Branch, B.M.A.: Finance Meeting.

APRIL 15.—New South Wales Branch, B.M.A.: Medical Politics Committee.

APRIL 16.—Western Australian Branch, B.M.A.: General Meeting.

APRIL 17.—Victorian Branch, B.M.A.: Executive Meeting.

APRIL 17.—New South Wales Branch, B.M.A.: Clinical Meeting.

APRIL 18.—Queensland Branch, B.M.A.: Branch Meeting.

APRIL 22.—New South Wales Branch, B.M.A.: Ethics Committee.

Medical Appointments: Important Notice.

MEDICAL PRACTITIONERS are requested not to apply for any appointment mentioned below without having first communicated with the Honorary Secretary of the Branch concerned, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

New South Wales Branch (Honorary Secretary, 135, Macquarie Street, Sydney): Australian Natives' Association; Ashfield and District United Friendly Societies' Dispensary; Balmalm United Friendly Societies' Dispensary; Leichhardt and Petersham United Friendly Societies' Dispensary; Manchester Unity Medical and Dispensing Institute, Oxford Street, Sydney; North Sydney Friendly Societies' Dispensary Limited; People's Prudential Assurance Company Limited; Phoenix Mutual Provident Society.

Victorian Branch (Honorary Secretary, Medical Society Hall, East Melbourne): Associated Medical Services Limited; all Institutes or Medical Dispensaries; Australian Prudential Association, Proprietary, Limited; Federated Mutual Medical Benefit Society; Mutual National Provident Club; National Provident Association; Hospital or other appointments outside Victoria.

Queensland Branch (Honorary Secretary, B.M.A. House, 225, Wickham Terrace, Brisbane, B.17): Brisbane Associated Friendly Societies' Medical Institute; Bundaberg Medical Institute; Brisbane City Council (Medical Officer of Health). Members accepting LODGE appointments and those desiring to accept appointments to any COUNTRY HOSPITAL or position outside Australia are advised, in their own interests, to submit a copy of their Agreement to the Council before signing.

South Australian Branch (Honorary Secretary, 178, North Terrace, Adelaide): All Lodge appointments in South Australia; all Contract Practice appointments in South Australia.

Western Australian Branch (Honorary Secretary, 205, Saint George's Terrace, Perth): Wiluna Hospital; all Contract Practice appointments in Western Australia. All government appointments with the exception of those of the Department of Public Health.

Editorial Notices.

MANUSCRIPTS forwarded to the office of this journal cannot under any circumstances be returned. Original articles forwarded for publication are understood to be offered to THE MEDICAL JOURNAL OF AUSTRALIA alone, unless the contrary be stated.

All communications should be addressed to the Editor, THE MEDICAL JOURNAL OF AUSTRALIA, The Printing House, Seamer Street, Glebe, New South Wales. (Telephones: MW 2651-2.)

Members and subscribers are requested to notify the Manager, THE MEDICAL JOURNAL OF AUSTRALIA, Seamer Street, Glebe, New South Wales, without delay, of any irregularity in the delivery of this journal. The management cannot accept any responsibility or recognize any claim arising out of non-receipt of journals unless such notification is received within one month.

SUBSCRIPTION RATES.—Medical students and others not receiving THE MEDICAL JOURNAL OF AUSTRALIA in virtue of membership of the Branches of the British Medical Association in the Commonwealth can become subscribers to the journal by applying to the Manager or through the usual agents and booksellers. Subscriptions can commence at the beginning of any quarter and are renewable on December 31. The rates are £2 for Australia and £2 5s. abroad per annum payable in advance.